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WEDNESDAY, JUNE 4, 1975

The hearing reconvened at 9:00 A.M. on Wednesday, June 4, 1975, in the Chambers of the Montana House of Representatives, State Capitol, Helena, Montana.

The Honorable Carl M. Davis, Hearings Examiner, presided over the proceedings.

APPEARANCES:

APPLICANTS

William M. Bellingham, Esq.
John L. Peterson, Esq.
John Ross, Esq.

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Ted J. Doney, Esq.
Arden E. Shenker, Esq.

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

Richard Klinger, Esq.

NORTHERN CHEYENNE TRIBE, INC.

Peter Michael Meloy, Esq.

NORTHERN PLAINS RESOURCE COUNCIL

Gregory H. Warner, Esq.

The following proceedings were had:

HEARINGS EXAMINER: Yes, sir. We are ready to proceed whenever everyone is.

MR. SHENKER: Thank you Mr. Davis. I want to put on the record at this time, in view of the fact that tomorrow is the scheduled date for the commencement of the Health hearings, in which the witnesses have been announced on behalf of the Applicants, that in connection with the testimony of Loren Crow, there are several documents that we do not have any record of having received, although it was undertaken during the course of his deposition that we would receive them and I would advise counsel that in Mr. Crow's deposition on page 18, there was a reference to a 1970 study conducted by Western Scientific Studies on air flows in the Colstrip area with balloon ascents. On page 26 of the same deposition there is a reference to the meteorlogical evaluation of the test-site area near Colstrip, Montana. We have not received either of those documents, and we should expect to receive them before certainly Mr. Crow testifies.

HEARINGS EXAMINER: Very well, I will defer that matter to Mr. Ross for a subsequent reply.

MR. SHENKER: May we commence with our cross-examination?

HEARINGS EXAMINER: Yes, sir.

MR. SHENKER: Thank you, sir.

Continuation of Cross-Examination of Mr. Roger A. Hofacker
By The Department of Natural Resources and Conservation
By Mr. Shenker

Q Mr. Hofacker, at the end of the day yesterday, we were discussing economic theory, a rather difficult subject to discuss at the end of a long day, particularly when it's a warm afternoon. Let's see if we can get a fresh start on it this morning before the heat rises too high inside the Chambers at the beginning of the day. Now, in terms of economic theory in the impact of costs of electricity with that which is demanded by customers, you would agree, would you not sir, that if current rates for the sale of electric power are equal to the average total cost of providing that kind of new increment of power, then the industry would be able to expand operations profitably indefinitely?

A I believe that statement would be true.

Q And on the same basis that I just stated, capacity eventually would be sufficient to meet demand?

A If you were permitted to build capacity as necessary, it would yes, sir.

Q In economic theory, capacity would expand to meet the demand based upon current cost increments?

A Yes, sir.

Q The worst that would happen under those circumstances, then, is that the utility might go through some period of time, during which the reliability for the delivery of energy would be reduced or in the alternative, there would be some temporary rationing of electricity other than on a price basis? That's the worst that would happen, right?

A Yes, sir.

Q In other words we are excluding from the hypothesis that I just described for you this morning - the risk of a chronic inadequacy of electric power?

A Well, the term chronic as you use it indicates for a long period of time. Now, what is a long period, might have to be defined as far as any particular industry, inadequate supply for 3 years might cause serious troubles in a particular industry.

Q Well, in economic theory when we talk about the utility industry, we are talking about chronic shortages of power, we are talking about something that happens over periods of months rather than over periods of hours, isn't that the time distinction that was made?

A I guess, sir.

Q On the other hand, if rates for the sale of energy are lower than the incremental cost for delivering that same energy, then your customers would not be encouraged to conserve that electricity, would they?

A I would say no, initially, however eventually those costs would have to go to the customers.

Q But during the time period that the rates are below the incremental cost of providing the energy, your customers not only would not be conserving, but they would, indeed, be encouraged to waste, wouldn't they?

A Well, the degree of encouragement would be a matter of opinion.

Q But, in those circumstances you have a curious thing happening, do you not, Mr. Hofacker, that in the circumstance of available electric power supply and lower cost to the customer than the incremental cost of expanding that electric power supply, you can, in economic theory, predict a chronic shortage to arise, isn't that true?

MR. BELLINGHAM: We object to this line of questioning on the grounds it's improper cross, it's ambiguous, immaterial and incompetent.

HEARINGS EXAMINER: Was this going to be a line of questioning that will develop for some period of time?

MR. SHENKER: Yes, I think so, Mr. Davis.

HEARINGS EXAMINER: On economic theory?

MR. SHENKER: Yes. The witness told us that the basis on which they did their load forecasting was their good grasp of the economic projections they thought should be made in the utility industry, and I am probing those.

HEARINGS EXAMINER. Objection overruled. Proceed.

WITNESS: May I ask one question?

MR. SHENKER: Sure.

WITNESS: May I know what document you are reading from?

MR. SHENKER: I am reading from lots of them, as it happens, Mr. Hofacker. There is no one document from which I have presently been reading.

HEARINGS EXAMINER: Very well. Let's proceed with the question and answer form. I think we are running way behind.

Q Do you remember what the last question was Mr. Hofacker? About the circumstance of a chronic shortage of power not being expectable in those circumstances in which the cost to the consumer is the same, or roughly the same, as the cost of providing the incremental increases of power? There might be some temporary dislocations but no chronic shortages. The question that was pending before the objection was, is it not true in economic theory, in the event of the cost to the customer being lower than the cost of the incremental provision of electric power, that in those circumstances, there will be a chronic shortage of power?

A I think I would change that will to could.

Q And the reason for that, of course, is that there is no incentive in the kind of economy in which we operate for utilities for corrective adjustments to be made in demand and supply?

A I am not sure I fully grasp that statement, sir. I think the cost of the supply of power has -- is one of the economic factors that a buyer has to use but there is many others, too.

Q The other complicating factor, Mr. Hofacker, is it not, is that under the circumstances I just posited to you, in which the cost is greater to the utility incrementally in providing power than the customer is charged for the power, that on the supply side investors will seek to withdraw capital from a nonprofitable industry?

A Yes, sir.

Q Do you know of a distinction that is made in the utility industry comparing on the one hand, adequacy of supply and on the other hand what is called an optimal supply?

A No, sir.

Q You have never heard of that distinction before?

A I have heard the term but I don't know the study that you are referring to.

Q You don't know what the differences are between the two?

A I could guess, but I won't.

Q All right. In system planning for a utility industry, whether it's a single utility system or a conflux of utility systems, there are a range of alternatives, one of which is to limit consumption, is it not?

A Yes, sir. That would have to come through the regular authorities though, at least under the present statutes.

Q We'll get into that in a moment. But your reserve margins relate to the extent to which you limit consumption of energy because is it not true, that what underlies the theory of the reserve margin is, in economic terms, that it costs more in terms of economic dislocation and inconvenience to the customer to have a disruption in his load more than once every 20 years than it costs to maintain the reserve?

A Yes, sir.

Q When did you last test that theory inside the Montana Power Company?

A I don't know that we have ever tested it.

Q That's what's called the conventional approach to system capacity planning, isn't it?

A Yes, sir. And we followed the conventional utility approach in the industry.

Q But you know, do you not, Mr. Hofacker, that it is now possible to perform explicit and meaningful evaluations on a cost-benefit ratio of increment assistant capacity for other reliability insuring type of investments. That's possible to do now isn't it?

A Yes, it's always been possible to do.

Q Doesn't the possibility occur to you, sir, that your historical reserve margins have not reflected a proper balance under costs and benefits?

A I wouldn't agree to that statement -- as to our opinion --

Q That possibility does not exist?

A I didn't say the possibility did not exist. Our opinion is that it has not been.

Q Well, I was asking about the possibility and what your opinion is as to the existence of it. What is your opinion on the possibility?

A I suppose there are many times there is a possibility of something other than you decide on.

Q Wouldn't one of the reasons that that possibility might come into sharp focus today be that costs of equipment, new plants and otherwise, today are considerably ahead of what they were some years ago, isn't that true?

A As everything has, yes, sir.

Q So in order to have resources on stream or available to you, it's going to cost you more than it ever did before?

A It would cost more but the costs are irrelative, sir. Everything else costs more so the irrelative increase in cost may be no different.

Q Moreover, you will agree, will you not, you have told us already, I think, that the forced outage rate on the larger fossil fuel unit appears to be higher than it has been on the smaller fossil fuel-fired units?

A Yes, and that's because of a shorter period of history. As we go out in time that will undoubtedly reduce as the others did.

Q And because of the fact that you have a higher forced outage rate today than you used to have, with the larger unit as compared to the smaller units, you do have a greater concern for providing for reserve, isn't that ture?

A We do. It was part of our economic analysis.

Q Now, let's take a look Mr. Hofacker, at what has actually happened to the Montana Power Company when you have had concern for not having sufficient energy to deliver. Have you made a study, sir, of the number of jobs lost as a result of your inability to deliver energy to a customer?

A Only in some specific instances when there was a request for power that would employ so many people if we had it. People would be employed if we did, if we didn't they wouldn't.

Q No, I don't mean potential jobs that were not yet created. I mean layoffs, industries that couldn't run and therefore, for that reason, lacking sufficient power to run, they laid off employees. Have you ever studied that?

A We are aware of the effects that have happened on systems, as an example the aluminum plant at Great Falls, when there was inadequate power - the layoffs there. That's not our customer however.

Q I was asking about your customers?

A I believe that there's been looks at what would happen in a refining industry and perhaps in the mining industry but I can't recall specific studies, sir.

Q Do you know of any record inside the Montana Power Company that tells you in 1972 any specific number of jobs lost in Montana as a result of your inability to deliver energy to your customers?

A No, because as I recall we haven't. We were able to serve our customers.

Q That was my recollection too, Mr. Hofacker. That was the reason I was somewhat puzzled to read in the Independent Record last night, here in Helena, a statement attributed to Mr. McElwain --

MR. BELLINGHAM: We object to this summary, and I am sorry to interrupt at this time but Mr. Shenker is getting in the record something that has been reported, apparently in the newspapers. We object to the question, as well as putting it in the record because we feel that that's prejudicial on the grounds that it's incompetent, immaterial and hearsay.

HEARINGS EXAMINER: Objection sustained. You can call Mr. McElwain if you want, under oath.

Q Do you know, Mr. Hofacker, of any basis on which any representative of the Montana Power Company could state that any specific number of jobs was lost in Montana in 1972 as a result of your inability to deliver power?

A I can't recall any, at the moment, but that doesn't say there may not have been.

Q It certainly would not be your view, would it Mr. Hofacker, that there was a significant amount of unemployment in 1972 to Montana Power Company customers because there was not enough energy to supply those industries?

A I would not wish to answer that question until I had checked the 1972 records to know what I was talking about.

Q Well, as the chief planner for the Montana Power Company and in your preparation for this particular proceeding, Mr. Hofacker, I'm willing to trust your recollection for now and I ask you to give me your best judgment in answer to that question.

A As I said before I would want to check the record because I don't recall anything specific, but there may well be.

Q What is your best judgment as you sit here today?

A That there may or may not have been and that's the best judgment that I have.

Q You just don't know?

A That's right, sir.

Q Who would you expect to know better than you?

A Perhaps the operating department, perhaps the marketing department, perhaps our top management.

Q Is the president of the Montana Power Company now in the practice of reviewing that kind of information, personally, rather than obtaining it from the engineering department or planning department?

A I have no idea who all he contacts as far as being informed, sir.

Q Has Mr. McElwain ever told you that he personally reviewed the loads of the Montana Power Company to see where you did or did not meet your customer's demands?

A No more than he has informed me that he has reviewed the financial records or accounting records or anything else.

Q You don't have any idea how he spends his time?

A He spends his time trying to run the Company.

Q You don't know what kind of things he reviews in order to do that?

A Records he considers pertinent to getting his job done.

Q You don't know what those are?

A Why should I?

Q I could get into a discussion as to why you should but I think your answer ought to be more responsive to my question.

A Well, he would look at any records that he would consider important to his ability to make decisions and that would include records from our department as well as from accounting, finance and so forth.

Q My question to you sir, is that, do you know what kinds of records he does review?

MR. BELLINGHAM: We object on the grounds that it's repetitious.

HEARINGS EXAMINER: Sustained.

MR. SHENKER: I have not had an answer to the question, does he know what records the president of the Company reviews from this man's department. I would like to have an answer to that question.

HEARINGS EXAMINER: My recollection is that to the best of his knowledge, he reviews whatever he thinks is pertinent. He made that answer so apparently that's all he knows.

Q What's pertinent?

MR. BELLINGHAM: We object on the grounds that it calls for conclusion, it's ambiguous ---

HEARINGS EXAMINER: You can answer that question. Overruled.

A I think what's pertinent would depend on what decision he was arriving at at that time, if it had something to do with the adequacy of resources it would be information from our department and from the operating department and from the marketing department.

Q Well, let's take something that you may know something more about, Mr. Hofacker. Let's move outside the Montana Power

Company and look at what was generally heralded in the utility industry and outside the utility industry as a perilous time that approached in the winter of 1973, right after the Arab oil embargo. The Pacific Northwest was supposed to be hard hit, wasn't it?

A Yes, sir.

Q What did they do about it?

A They curtailed load.

Q Who is they? The utilities?

A Yes, sir. The utility industry.

Q Actually, what happened was that the companies who purchased power from the utility industry curtailed power usage and minimized employment layoffs by scheduling repair and maintenance work during the rather short period of the impact in the end of 1973, is that true?

A That is only part of what happened.

Q As a result, is it not true that in November, 1973 the usage of electricity in the Pacific Northwest was almost identical to what it had been a month before?

A I don't have the records available. It might very well have been.

Q And the next month, December of 1973, it was 10% below the corresponding period of 1972, wasn't it?

A Yes, because of layoffs and shut-downs, as much as anything.

Q That was sort of a gloomy picture that was painted of the economic situation during the energy crises of the Pacific Northwest, right?

A Yes, sir, and those people in Montana that were out of work because of it thought it was mighty gloomy.

Q Do you know Mr. Lou Growney?

A Pardon.

Q Do you know Mr. Lou Growney?

A No, sir.

Q An officer of the Pacific Power and Light Company?

A No, sir, I do not know him.

Q Did you know of his view that the energy crises, so called, in the Pacific Northwest had had an insignificant impact on employment in the Pacific Northwest?

A Well insignificant -- he may have said that, I don't know, but insignificant is irrelative again.

Q Did you know his view that there was no impact in the electric supply area, except with respect to the BPA delivery to its aluminum company interruptible customers?

A It might well have been that but there was a ripple effect that affected others than the aluminum industry.

Q In trying to determine the relationship between the availability of electric power and industrial output, the fact of the matter is, is it not Mr. Hofacker, that there is simply no fixed ratio to guide us?

A No, sir, other than the basic energy needed to do so.

Q We know that the output from industry varies from time to time from industry to industry, from region to region, and if you want to be broader in your scope, from country to country, irrespective of the supply of electric power, don't we?

A I wouldn't be aware that there was necessary irrespective of electric power, but perhaps you have a statement that says that.

Q You disagree with this?

A I think the availability of energy has a lot to do with the output.

Q With the same amount of electric power available, it is true that we have varied output from industry from time to time and from place to place?

A Yes, because of your economics, demands and so forth.

Q Therefore, is it not true, Mr. Hofacker, that what we have to guide us are only the trends of the past and an intuitive judgment from them?

A We, as utilities, yes, plus what the entrepreneurs, the industry, plans to do in the future.

Q If future conditions in fact are substantially different from past conditions, such as scarce sources of abundant electricity then isn't it difficult to have confidence in the trends of the past and intuition alone?

A This is right. As I have said before you have to look to what the future -- to what is happening right now as well as the past.

Q We talked some yesterday, Mr. Hofacker, about the 18% reduction in the use of energy in southern California. That didn't just happen by somebody wishing it to happen, did it?

A No, sir, not the way you put it.

Q No, in fact there was a commission appointed in order to come up with its recommendations as to how energy should be conserved, isn't that true?

A Yes, sir. The utility is not a free agent in this area.

Q And the commission requested all utilities in the California area to provide specific programs designed to cope with electricity shortages?

A They did.

Q And the utilities of course complied with that, did they not?

A I think they participated in helping form the way they could be accomplished.

Q Do you remember what some of the alternatives were that were listed by the commission on how we could, in fact, decrease the consumption of electricity?

A I don't recall specifically. I know there are many things that were talked about.

Q How about a discount of prices for consumers who decreased their consumption compared to a like period of the preceding year?

A This is one of the aspects, yes, sir.

Q Have you done that here?

A No, sir.

Q Do you propose to?

A No, sir.

Q Has any of the Applicants in this proceeding done so?

A You'll have to ask them because I don't know.

Q You don't know if they have done so?

A They haven't told me they have.

Q You haven't heard about it if they have?

A No, sir.

Q Another alternative was placing all future rate increases on the tail blocks of the existing decreasing block pricing structure so that in time you'd have an increase block structure.

Was that another alternative?

A Yes, sir. It reads real well doesn't it?

Q The commission phrased its suggestions well. A third alternative was to invert the rate structure in order to achieve that increase in block.

A These are all possibilities, yes, sir.

Q The fourth was to require new metering that would permit higher prices for consumption of electricity at demand peaks every day.

A Yes, sir.

Q And a fifth was to have seasonal peak pricing which might not require new metering but would price electricity used during seasonal peaks higher than that used at other times.

A Yes, sir.

Q Another alternative was marginal cost pricing, that is pricing all electricity at the cost of producing the last unit at the most recent plant, rather than an average cost pricing that is currently used in the industry?

A Yes, sir.

Q Another alternative was to base rates on the price elasticity of electricity?

A Yes, sir.

Q Still another was to determine rates for domestic users of large quantities of electricity such as space heating, air conditioning and all-electric homes?

A Yes, sir, and I presume there are many, many more.

Q Two others. One was to rate domestic users of small quantities of electricity and last was to have other rates relate to peak loads alone.

A Yes, sir, and I am sure that's not all inclusive of the possibilities if a person wants to review them.

Q Those were just the ten proposed by the California commission?

A Yes, sir.

Q Have you proposed any of those?

A We have not.

Q Have you heard of any of the other Applicants in this proceeding proposing any of those?

A No, sir.

Q Do you know that the commission now plans to submit its full findings to the California legislature by August of this year?

A No, sir.

Q Are you familiar with the Warren Alquist Act in California which took effect January 7, 1975, to establish an Energy Resource Conservation Commission?

A No, sir.

Q Are you familiar with similar plans that have been undertaken in the state of New York, to move into the field of energy planning for conservation?

A I believe I heard of some activity in that area but I don't know any specifics about it.

Q The work has been underway in New York since June of 1971 and includes 23 specific steps that should be taken, does it not?

A If that's what the report says, I don't know.

Q In some, it is true is it not, Mr. Hofacker, that legislatures around the country are beginning to grapple with the problem of energy conservation by setting up specific commissions to make specific recommendations, guidelines and regulations to force the utilities to do that same kind of grappling?

A Yes, sir, I think they are finding it a very hairy job.

Q There is another body that is taking the same kind of responsibility on a broader basis, that is the Federal Power Commission, is it not?

A Yes, sir. The same Commission that told us we weren't carrying enough reserves.

Q And you believe the Federal Power Commission today is saying you should expand your reserves?

A Not today, sir.

Q No. In fact, since 1966 the Federal Power Commission has been looking at ways of finding the handle on -- at least suggesting to utility industry -- how they should conserve on energy that is delivered?

A The utility industry has been suggesting to the Federal Power Commission the same thing, sir. The EEI has been working on adequacy of reserves and how to best utilize power, for years.

Q Well, what the Federal Power Commission did recommend in 1966 was that there had to be an examination of all the institutions for regional coordination of electrical bulk power supply and for the interconnection of systems, wasn't that true?

A Yes, sir.

Q And then in 1967 the Commission prepared a three volume report attacking the problem of energy shortages?

A Yes, sir.

Q Do you recall that?

A I recall the report, I don't recall the specifics at all.

Q The report contained some 34 recommendations directed to preventing major power failures of any kind and recommending the establishment of regional councils for planning around the country, isn't that true?

A Yes, sir. I believe this followed the northeast blackout.

Q We'll get to the regional plans around the country in just a moment, but moving to what the Federal Power Commission has been doing year by year, 1968 they proposed the Electric Power Reliability Act, did they not?

A Yes, sir, but the utilities in the west initiated this Act. We were the first council and our council, the Western States Coordinating Council, started the National Electric Reliability Council, so we were not always having to be led. We did a little bit of leading too.

Q That's not really quite correct is it, Mr. Hofacker? The very first council was the Northeast Power Coordinating Council established a few months after the northeast power failure in November, 1965, and that was followed in January, 1967, of the East-Central Area Reliability Coordinating Agreement and the third was the establishment of the Western States Coordinating Council in November of 1967.

A But I believe our preambles and so forth were somewhat more expansive than theirs if I recall my history correctly.

Q In fact these Regional Reliability Councils, nine of them in all, did grow up in this time period from 1965 to 1968?

A They grew from what had been operating councils, such as the Northwest Power Pool, Southwest Power Pool and so forth.

Q Has the Electric Power Environmental Policy Act ever been enacted into law?

A I don't know.

Q Were you aware of the lobbying efforts of the utility industry against the enactment of that legislation?

MR. BELLINGHAM: We object on the grounds that it is incompetent.

HEARINGS EXAMINER: He can answer yes or no whether he is aware of it. Overruled. Do you want a continuing objection to this -- ?

MR. BELLINGHAM: Yes, sir, I would like to on the grounds the material is incompetent, vague and ambiguous, immaterial and is of no probative value.

HEARINGS EXAMINER: Very well, you may have the continuing objection. You may answer whether you are aware of it or not.

A I know that there was lobbying but probably for good reason.

Q Against the legislation?

A I don't know that it was all for -- all absolutely against. I think it was for different language in the legislation, yes, sir.

Q And it hasn't yet been enacted has it?

A Not to my knowledge.

Q Moving into 1971 the Federal Power Commission issued an order, did it not, requiring all electric utilities to submit weekly fuel emergency reports whenever the utility determined that it's fuel supplies were threatened or fell below the level necessary to assure reliability of services?

A Yes, sir. And we have been exchanging that data within the

Western Systems Coordinating Council before that order ever came out.

Q Have you ever submitted such a weekly report to the FPC?

A Not me. The operating department has.

Q They do so on a regular basis?

A Yes, sir.

Q Every week?

A I wouldn't say every week. It's whatever you are required by the regulation.

Q Well, the regulation as I just stated to you, Mr. Hofacker, as I understand it, requires a submittal of the weekly report when you have an emergency as your fuel is falling below a level necessary to assure reliability of service. Has that happened every week?

A It probably has not.

Q If you look at the industries, Mr. Hofacker, that are the most energy intensive, the list would take you down from primary aluminum at the top, would it not?

A I believe so.

Q To aluminum rolling and drawing, then to industrial organic and inorganic chemicals, then to primary nonferrous metals, then to aluminum castings, metal voil, architectural metal work and electric utilities, in that order?

A I know there is such a list and it sounds like a logical order to me.

Q And in terms of those industries which coal rather than electricity for their fuel the ones that are the most energy intensive are the hydraulic cement and then the industrial organic and inorganic chemicals, then the primary aluminum?

A Again I don't have the list in front of me so I'll accept your reading.

Q And in terms of total energy you would expect asphalt felts and coatings, paving mixtures and blocks, hydraulic cement and primary aluminum to be at the top of the list, wouldn't you?

A I guess I would.

Q Do you know what federal agency of the United States Government consumes 1.5% of all of the energy in the United States?

MR. BELLINGHAM: We object. It is incompetent.

HEARINGS EXAMINER: Sustained.

Q You would expect the major consumers of energy supply to be making their own plans, would you not, of the proper availability of energy for them?

A That's been ever the case.

Q The United States Department of Defense is a major consumer of energy in the United States, isn't it?

A I believe so.

Q Do you know of their study having been established to meet energy needs by use of nuclear power?

MR. BELLINGHAM: We object on grounds of incompetent.

HEARINGS EXAMINER: You can answer yes or no.

A I don't know. I am not aware of it.

Q Are you aware of the fact that the Department of Defense for the last 3 1/2 years has been working on a project for the use of solar energy at Ft. Hood, Texas?

A I know of solar energy projects but I am not fully acquainted with this one as you named it.

Q Do you know of the solar energy project that is being funded by the National Science Foundation?

A I believe there is one but I don't know the specifics.

Q Do you know that its effect is to reduce the requirement for electric power?

A It would have to be.

Q Would you agree Mr. Hofacker, that a peak in the efficiency of new fossil-fired units was reached around the year 1967 with the installation of generating plants having a heat rate of approximately 8600 Btus per kilowatt hours?

A Yes, sir.

Q And from then on the trend for the best units in any utility system, was toward higher heat rates, was it not?

A Yes, sir because of newer facilities having come on it takes an aging degree -- an aging period of time to obtain that efficiency whereas a steam plant is a very complicated system.

Q And in the years subsequent to 1967 more rather than less fuel per kilowatt hours has been required for increasing the increments of production of electricity?

A It would have to follow the statement you made before.

Q It is true, is it not Mr. Hofacker, that the utility industry itself has, for decades, maintained that price was an insignificant determinant of demand for electric power?

A And that has been true.

Q You consider that to be true despite the fact that since 1962 there have been studies showing the direct relationship between price and demand?

A I believe the previous statement you said industry --

Q Yes.

A And the cost of electricity in industry has been the lowest percentage of any portion of their other costs; very insignificant compared to other costs and that's the reason I said that first statement. I don't know if it follows that if there has been another study I am not aware of it.

Q Don't you know that since 1962 there have been studies showing that there is in fact a growing elasticity in the effect of price on demand?

A I have seen several studies, no two of them agree.

Q Are you familiar with the study done for the Madison Gas and Electric Company in the midwest?

A No, sir.

Q Are you aware of a 2.2% decrease in the average kilowatt hour used per residential customer from that utility system?

A No, sir.

Q Would you disagree with the statement that based with price increases customers in fact decreased their demand for electric power?

A It could. There are some cases probably where it is,but I am not sure that it is a blanket 'yes'.

Q What we have had happening in the utility planning field for the past number of years is a scenario somewhat like this, is it not? You look at the Pacific Northwest, for example, in Oregon there is enacted a moratorium on new nuclear plants, hoping that needed electricity will be generated by hydroelectric facilities in Idaho, while in Idaho they were delaying the construction of hydro-electric plants on the Snake River hoping construction would begin on nuclear reactors in Oregon. And at the same time southern California passed laws which eliminated their new fossil-fuel facility potential knowing the plants would be built elsewhere and then the Southern California Edison Company participated as a partner in the expansion of the Four Corners Plant in New Mexico transmitting the electricity to its load centers in southern California. That's what's going to happen, isn't it?

A That's what has been happening to the utilities.

Q And the idea of course, is to enjoy the amenities that electric power can provide while letting others suffer from the undesirable effects of the production business.

A These are the statements of the vociferous ones, yes, sir.

Q Now looking at the Montana Power Company's peak load, you'd have to say, would you not Mr. Hofacker, that it's rather inconsistent?

A Would you say that statement again, sir?

Q Of course. Looking at the Montana Power Company's peak load over the years -- over the last 5 years -- in any event you'd have to say that it's been rather inconsistent, wouldn't you?

A The total peak load has. The base load has not.

Q Because as we look at the peak load, -- your peak load came in January did it not?

A Well, it depends on the season. Sometimes it's December, sometimes January.

Q For 1969 it was January 5, for --

A All right.

Q For 1970 it was January, in 1971 it was January 25; 1972 it was January 8; 1973 it was January 10.

A O.K. January.

Q And that peak load year by year is 753, 810, 867, 843, 824.

MR. BELLINGHAM: What was the last number?

Q 824, is that right?

A Yes, sir.

Q During that time Mr. Hofacker, it is true, is it not, that you have a constant amount generating facilities?

A Generating facilities but varying amounts of purchase.

Q Your generating facilities was 768 megawatts all the way across?

A Yes, sir.

Q During those same years 1969 through 1973-74, your purchases have been respectively 141, 209, 271, 263, and 192?

A These are peak purchases are they, sir?

Q They are your net purchases.

A But what are they? Peak or energy, there is a difference.

Q Probably peak.

A Well, it may well be but we -- all right.

Q That's true?

A Yes, sir.

Q Then for example in the year 1969 although you purchased 141 megawatts you actually had a surplus of 15 megawatts on your generating capacity alone, didn't you?

A That's a mighty small reserve to carry a load like that.

Q It is true, is it not, from your experience of your peak in 1969 that you had more generating capacity than your actual peak load?

A Yes, sir. The 15 megawatts you mentioned.

Q So actually what you had by way of a reserve was 159 megawatts in 1969?

A Yes, sir.

Q A little over 20%?

A But it was a result of a loss of a load during that year preceding '69.

Q Undoubtedly there were losses and gains in loads all through the years, try and take a look at what you actually experienced in your peak loads and in your inconsistency over the years. In 1970 your generating units were 42 megawatts short?

A They were.

Q But you bought 209 megawatts?

A Yes, sir.

Q That's 167 megawatts more than you needed?

A It wasn't 167 megawatts more than what we could have had to provide at that point.

Q But it is 167 megawatts more than you did need?

A Yes, sir. But may I remind you that we have to have the facilities available for the demand at the time. If it occurs, we are supposed to have it.

Q But the demand was 810 megawatts, what you had available was 977 megawatts?

A Yes, sir.

Q And then in 1971 you had 99 megawatts short from your own generating capacity but you bought 271 megawatts?

A We did.

Q In 1972 you had 75 megawatts short of your generating capacity
but you bought 263 megawatts?

A I presume those statements you have are correct. I don't
have mine in front of me.

Q They came from Dick Davenport in the planning department.

A O.K. Yes, sir.

Q And in 1973 you were 57 -- 54 -- 56 -- megawatts short and you
bought 192 megawatts?

A Yes, sir.

MR. SHENKER: May we have this marked as DNR Exhibit #11?

HEARINGS EXAMINER: Yes sir. It will be so marked as #11.

MR. SHENKER: For illustrative purposes we will offer #11.

MR. BELLINGHAM: For illustrative purposes we have no objections.

HEARINGS EXAMINER: Very well, Exhibit #11, Department of Natural Resources will be admitted without objection, for illustrative purposes.

Q The winter of 1973-1974 across the country have the lowest
record increase in growth of electricity delivered, did it
not?

A Yes, sir, because of the conservation efforts made nationwide.

Q But this year the winter had an increase of 1.6% increase, is
that right?

A Are you talking nationally?

Q Yes, sir.

A Yes, sir, but would you mind mentioning what happened in the

Northwest?

Q Well, let's take a look at the Montana Power Company. Montana Power Company change from the winter of 1973 to the winter of 1974 was a 1.6% increase, is that right?

A Yes, sir, but for some very good reasons that I have outlined before.

Q For the Pacific Power and Light Company there was a decrease of 3.0%?

A If those are the statistics. I don't know theirs.

Q And the Portland General Electric Company was a decrease of 4.1%?

A I am unaware of these numbers. You read them, I'll have to accept them.

Q You subscribe in the engineering department, do you not, to a magazine called "Electrical World"?

A I do, but I don't have time to read every page of every magazine I get, sir.

Q They publish accurate statistics, don't they?

A I would hope that they're accurate.

Q The Washington Water Power Company reported their decrease was 0.2%?

A This is '73 over '72?

Q No, this is '74 over '73. And the Puget Sound Power and Light Company a decrease of 0.7%?

A Are you talking average energy?

Q We are talking about winter peak change. '73-'74, '74-'75. You'd accept those figures wouldn't you?

A I'd have to. I have no basis of argument against them at the moment.

Q You know do you not, that the most recent statistics released on electric power generation by the Federal Power Commission shows that they are 1.1% below where they were the previous year?

A For 1974?

Q Yes, sir.

A Yes, but I think again in some areas that the last half of the year it was as much as 10% over last year, when you go down the list.

Q Yes, they're individual companies like one in Kentucky, for example that had a 14% increase?

A This is by areas I am talking about. I didn't know the companies but there are several areas in the latter part of the year where there was as much as 10% over the previous year.

Q What do you think it was in the Pacific Northwest?

A I saw the number and can't recall it, sir.

Q Now, one of the reasons that you assigned Mr. Hofacker, to an expectation of greater energy usage is the expansion of environmental control, is that right?

A Yes, sir, as has been the case in recent years.

Q Indeed, one of the larger users of energy for environmental control will be the utility itself, if it has to put in a stack-gas cleaning device like the one you propose at Colstrip 3 and 4, isn't that right?

A Yes, but over all I think its considerably less than the sewage and water treatment plants required nation-wide.

Q Don't you expect that the energy lost as it were from delivery to other customers from the Colstrip units as a result of the need to operate that kind of stack-gas cleaning system you propose, will be approximately 7%?

A I believe that's the consumption of power required, yes sir.

Q I believe I was asking Mr. Hofacker a question and he didn't have the answer to it -- you are Mr. Hofacker -- I was asking Mr. O'Connor the question and I don't think he had the answer to it. Do you not know, sir, that estimates for the end of the year 1974 show that hydro power facilities have reversed the trend to it and now increase their share of facilities?

A Yes, sir. In capacity only, very little energy sir. I wish to correct a statement I made before while my mind is clear.

Q Sure.

A I believe the percent of power consumed by the scrubbers is something like 3 1/2% and not 7%.

Q Someplace between 3 and 7?

A I said about 3 1/2%, not 7.

Q I see. You know, do you not, Mr. Hofacker, that hydro facilities do not create air pollution?

A That's right, and they don't create energy in the ones you are talking about either.

Q Well, hydro facilities do exist which create energy, as you know.

A Yes, sir, but the energy capability of most of the hydro sites have been consumed long ago.

Q I know your views Mr. Hofacker, I am simply asking whether you knew that hydro facilities, whether they create energy or peak, do not create air pollution along with them?

A No, but they create water problems.

Q That is flooding of reservoirs?

A That is fish problems if you talk to the Fish and Game people, with nitrogen and all this and that, which I am not sure I agree with all of them, but there are problems.

Q You would agree, would you not, with the report of Dupree and West for the U.S. Department of the Interior that there will be in the future decrease in dependence on fossil fuel and rapidly increasing dependence upon nuclear generation?

A As time and industrial facilities allow them to be brought on.

Q You would agree also, would you not, with respect to the comparative costs that at a 70% capacity factor for a nuclear plant it could cost $700 per kilowatt more than, for example, an oil plant and still be economical?

A No, sir, I am not aware of that.

Q You disagree with that?

A I might.

Q And at a disparity between coal and nuclear fuel costs of from .5 to .9 of a cent per kilowatt hours would you disagree with the statement that coal-fired plants have to be 120 to 370 dollars per kilowatt less than the price of the nuclear plants in order to be economical?

A It might be, depending on how you use the mathematics, sir.

Q Did you know Mr. Hofacker, that in interstate commerce the Federal Power Commission was establishing a new national rate of 50¢ per million Btu for all new gas sales?

A No, sir.

Q Is that a significant fact to you?

A I don't know that it is one way or the other.

Q Do you know what priorities the Federal Power Commission has established for service categories for natural gas?

A No, I know there's discussions of reduction for industrial and saving what's available for the residential people.

Q Residential is at the top of the list, isn't it?

A I think it is.

Q Then comes large commercial requirements, then other industrial requirements, then firm industrial requirements for less than 3 million cubic feet per day, then firm industrial requirements for more than 3 million cubic feet per day? Then comes the interruptible requirements after that?

A Yes, sir.

Q Did you know that at the end of 1974 there were license applications pending with the Federal Power Commission on ten proposed projects for 11,656 megawatts of new capacity?

A I don't know that. I know there's pending projects but I don't know the specifics.

Q You were telling Mr. Bellingham at the end of your direct examination, Mr. Hofacker, something about the instructions that you had given to the Bechtel Corporation before they made a report for you in 1964. Did I understand correctly that you had instructed Bechtel not to look at other hydro-sites that were not existing already?

A Yes, sir, because we had already assessed that situation.

Q You didn't ask for their help on that?

A We may very well have had some previous to that, but I am not sure of it. I know we have had others at times but I don't know if it was Bechtel or not.

Q And your own personal compilation of what you believe had been recommended by Bechtel was 315 megawatts of peak and 40 megawatts, plus or minus of energy, right?

A May I see the page you referred on that because that numbering is --

Q It's your handwritten note. I think it is in the first page of the report you are looking at. Your handwritten note.

A No, I did not recommend that to them sir. That was a compilation of the total of all the possible additional development on our system.

Q I am just asking about what your note says here in your handwriting. It's 315 megawatts for peak and plus or minus 40 megawatts for energy?

A That is the net gain, on my notes, from those hydro possible hydro developments.

Q Mr. Bellingham had also asked you before the end of your direct examination last Friday, on the 1975 long-range plan that you submitted to the Department of Natural Resources and Conservation, and I believe you told him did you not, that reflected the Montana Power Company plans for the future?

A It reflected a sizeable number of plans, yes, sir.

Q Wouldn't that be true of the reports that you had submitted in 1974 and 1973 also, that they were reflecting your plans for the future?

A Yes, sir, but each year it changes because the future looks different each year.

Q Now, we are talking about 700 megawatts approximately in each of the Colstrip Units 3 and 4. In order to translate that into the sales of energy in kilowatt hours it would be roughly approximate to about 2 billion kilowatt hours from 700 megawatts, wouldn't it?

A 700 times 6,000 -- I'm -- we take a 75% load factor on that plant. 700 times 6,000 is about 4 billion, I believe, is it not? 7 times 6 is 42, if I've got my decimal point right.

Q And you take off what? 25%?

A I already took off the 25% when I did that.

Q Well, you think that the 700 megawatts unit of Colstrip 3, for example, would generate something like 4.2 billion kilowatt hours?

A Just a minute, let me check my decimal point. 4,200,000,000.

Q From one 700 megawatt unit?

A That's assuming that if it was available 75% of the year.

Q And we would take -- what do you take off, 40% -- for what's going to be in Montana as opposed to what's going out of Montana?

A Yes, sir.

Q So it would be about 60% of that that's going out of Montana, that's about 2 1/2 billion megawatt hours?

A Yes, sir.

Q What were the sales in terms of billion kilowatt hours from the Pacific Northwest to the Pacific Southwest last year?

A I don't know. I believe you read them the other day, but I don't know that they are right now.

Q They were a little over 2 billion, weren't they?

A I think this is probably in the area, yes sir.

Q I think I may have misstated the question. I said last year, I meant to say so far this year. Is the 2 billion figure one that you would accept for so far this year, 1975?

A I wasn't aware of that number for 1975, no, sir. A lot of these shipments south, as I understand, are for movements north of power at other times of the year.

Q We haven't talked with you on cross-examination yet, Mr. Hofacker, about the Western Energy Company's available coal to fire the Colstrip Units but it is true, is it not, that the coal reserves at Western Energy Company are completely adequate to provide fuel for all of the Montana Power Company's present and projected thermal and electric generating plants?

A I believe that's a statement that appears somewhere in some of our publications.

Q It's true, is it?

A I believe so.

Q As of November of last year it was true that the Company had an adequate supply of natural gas to meet the requirements of its present customers and at that time you were accepting new residential and commercial customers?

A I know we were accepting new residential. I am not acquainted with the gas industry; I understand though that we had not been accepting new industrial customers. Now whether they were commercial customers or not, I don't know. I am not in the gas business at all.

Q As far as the Colstrip Units are concerned it is the intention of the Montana Power Company to finance those Units through the bonding capacity of Rosebud County, right?

A Partially, for the anti-pollution, by law, but that's only a portion of the project.

Q Well, for the anti-pollution devices alone, you intend to fund those expensions by using credit of Rosebud County in issuing bonds, isn't that true?

A I think the credit that backs up this fund is the Montana Power Company and not Rosebud County.

Q Who issues the bonds?

A Rosebud County does, but it is guaranteed by Montana Power Company paying them.

Q And its as a result of the issuance of the bonds by governmental agencies that rather low interest has to be paid on them?

A As any business should do to keep their costs down.

Q The reason, of course, that those bonds are low interest paying is that the interest on them is not taxable to the recipient?

A This is proper.

Q It is true, is it not, Mr. Hofacker, that last year your sales to other utilities increased over the previous year?

A It may have, I don't recall them. That may have included increased exchanges of energy for peak and vice versa.

Q And in your view today the reliability of service that comes from the Montana Power Company is enhanced by the location of hydro-electric generation on 4 separate watersheds with different precipitation characteristics?

A Yes, sir.

Q Then that reliability is augmented by your thermal generation?

A It is.

Q Your expectation in November of 1974 Mr. Hofacker was, was it not, that you would have sufficient capability to meet the projected demands of your customers and maintain reserves of at least 15% in firm demand?

A Those were our plans, yes sir. Sometimes the best laid plans go astray, as they say, though.

Q One of the reasons that some of those plans go astray is that you can't always anticipate new regulations that are coming out such as new regulations proposed by the Environmental Protection Agency with respect to clean air?

A This is correct.

Q As a matter of fact you are not able today, are you, Mr. Hofacker, to tell us what the impact of the regulations of the Environmental Protection Agency is on future pollution control necessity at Colstrip?

A We can only tell you what the present regulations' effect will be but not -- we don't know what future regulations will be.

Q As to existing regulations that have been proposed and adopted now by the Environmental Protection Agency, in November of 1974 you certainly couldn't predict the impact of those regulations, could you?

A No, as I said, future -- from the date you are standing you can't predict what the future regulations are going to be or the effect of them, either.

Q Even though you knew what the proposed regulations were in November of 1974, you could not then predict the effect on you, could you? At Colstrip?

A If we knew what the proposed regulations were, yes we could. It's the ones that were passed that would have -- that we wouldn't know.

Q I want to make sure I understand sir. If in November of 1974 you knew what regulations had been proposed by the Environmental Protection Agency of the state for clean air, at that time could you predict the impact of those proposed regulations?

A Yes, sir.

Q I want to show you, Mr. Hofacker, an ordinary prospectus dated November 4, 1974, from the Montana Power Company.

MR. SHENKER: I suppose I should have it marked as Exhibit DNR #12.

HEARINGS EXAMINER: Would you mark it please? It will be marked DNR #12.

Q Have you seen that before, sir?

A I have, sir.

Q Would you turn to page 19 of that prospectus?

A I have it.

Q Do you see on the top paragraph on page 19, the last sentence, the statement that you cannot predict the impact of the proposed EPA regulations on the Colstrip complex?

A It doesn't say EPA regulations. It refers back to the air quality standards adopted by the state of Montana and has been disapproved by the Environmental Protection Agency to the extent that they lack procedures or regulations for preventing significant deterioration.

Q Will you look at the last sentence on the top of page 19? It says --

A Yes.

Q It says EPA has proposed no regulations --

A Now to the extent these regulations were specific we could calculate -- what do I put -- to the extent they were generalities, we could not and there were both. When they propose something there are many things, and some of them are statements without numbers attached thereto.

Q The next sentence says "The Company cannot predict the impact of these regulations". What you mean by that is to the extent the regulations were not in numbers, you couldn't predict it?

A Yes, sir. If they were just saying what they were -- if it was in general terms, and initial proposals often are.

Q To the extent that the numbers were in the proposed regulations, you could have predicted on that?

A Yes, sir, if they were specific.

Q Did you?

A Pardon?

Q Did you?

A I would presume that we did look to that but I did not, personally.

Q It is also true with respect to the entire Colstrip complex, is it not, that one of your reasons for making the investment that you seek to make, is that in order to take advantage of the investment tax credit that would be available to you?

A Would you state that again sir? I was still thinking of those regulations.

Q Sure. It is also true with respect to the entire Colstrip complex that one of the reasons you seek to make that investment is to take advantage of the entire investment tax credit available to you for it?

A No, sir. We will take the investment tax credit, but that was not one of the reasons for building the plant.

Q That is not?

A At any time. It would provide resources is whey we build a plant.

Q As between building the plant at a time in which you are entitled to take an investment tax credit and building it at a time in which you were not entitled to take an investment tax credit, is it your testimony that the tax credit does not enter into your considerations?

A Only after we've decided when the resources are needed to meet the load. Then if that is the time the tax credit is appropriate, we will take it, but we don't take and decide when that will be and then build a resource to take advantage of it, no sir.

Q In terms of that time frame, Mr. Hofacker, it's true, is is not, sir, that well over a year ago you had already done a study on delaying 700 megawatt units at Colstrip for one year?

A We're always looking at the effect of what delays might affect -- how -- what the result is going to be.

Q You did do such a study, did you not?

A How formal that was, I don't know, but I am sure we looked at it.

Q Do you know Dan Wheeler?

A Yes, sir, he's in our engineering department.

HEARINGS EXAMINER: Would this be a good time to take a -- We've gone an hour and a half now -- to take a little break? I am very pleased to see a member of the general public is with us today. Would you like to appear and participate Mr. Holland? We've invited -- . Very well we'll recess.

(Brief Recess)

(Following a brief recess, the hearing reconvened at 10:55 A.M. on June 4, 1975)

Continuation of Cross-Examination of Mr. Roger A. Hofacker By the Department of Natural Resources and Conservation

By Mr. Shenker

HEARINGS EXAMINER: You may proceed Mr. Shenker.

MR. SHENKER: Thank you Mr. Davis. May I offer Exhibit #11, is that the one that I marked last? Yes 11.

HEARINGS EXAMINER: Mr. Shenker I've got #11 as being offered and received. This is 12.

MR. SHENKER: That's the most recent one, is 12?

HEARINGS EXAMINER: Yes, sir.

MR. SHENKER: I would like to offer that, please.

MR. BELLINGHAM: No objections.

HEARINGS EXAMINER: Very well. Exhibit 12 will be admitted without objection.

MR. SHENKER: That's the prospectus.

Q Now, Mr. Hofacker, we were talking about your ability to meet pollution control. You have known, have you not Mr. Hofacker from the beginning of the Colstrip 3 and 4 project, that you were going to anticipate difficulties with having adequate scrubbers to solve your problems?

A We knew the problems could be met with scrubbers but that they may have mechanical difficulties getting them going properly. The science is there so we can meet the pollution problem.

Q By October of 1973, you knew that as a result of testimony that had been given in the legal proceeding in the State of Pennsylvania that involved the art of fly-ash scrubbing as a result of problems that had been encountered in the Dave Johnson power plant of the Pacific Power and Light Company, that you were going to have concerns with respect to those difficulties, didn't you?

A Yes, sir, but that they were not unsolvable.

Q You knew at that time that fly-ash scrubbers had encountered a great deal of trouble and were not reliable enough in October of 1973 to be called a commercially proven product, isn't that true?

A As any new piece of equipment or apparatus that comes out.

Q The most current proposal you have for control system at 3 and 4 is essentially a duplicate of the control system that you proposed to install in 1 and 2, isn't it?

A To the best of my knowledge, but you're getting in an area that I am no expert in this scrub area.

Q We are just going to get the preliminary -- to your expertise and not beyond that, sir.

A You are going to reach that quickly, sir.

Q You know that the Combustion Equipment Associates are the ones who are providing the scrubbers for 1 and 2, don't you?

MR. BELLINGHAM: We object to this line of testimony on the grounds that it exceeds the scope of the direct and it is improper cross-examination.

MR. SHENKER: Well, certainly anything dealing with what refers to environmental impact is proper to bring in with this witness.

HEARINGS EXAMINER: I'm going to overrule your objection under the rules we are functioning under. We have exceeded the direct pretty much throughout, it seems to me and I think he can testify as to what he knows and we won't put in evidence through questions though as things that he doesn't know, I hope. Now, will you ask the question, sir.

Q Combustion Equipment, as you know, is putting in the scrubbers for 1 and 2?

A They are.

Q Do you know that they have never previously put in such a scrubber anywhere, don't you?

A There are very few that have put in scrubbers. I know that they have previously put in scrubbers, yes, sir.

Q That kind of equipment?

A They have put in venturi type scrubbers in Nevada.

Q At the Reid Gardner station you mean?

A The Reid Gardner station, yes sir.

Q Your understanding is that what the Combustion Equipment Associates intends to put in here at Colstrip is what they already put in at Reid Gardner, is that right?

A I did not say that. My understanding is not that, sir.

Q What is your understanding then?

A That they have put scrubbers on line - ours has some differences
from those, but they are not completely inexperienced in the scrubber field. They have put scrubbers in the petroleum industry for years.

Q They've never put yours in a system before, have they?

A No, sir, nor has anybody else.

Q Right. It's a brand new system?

A I don't know whether it should be called brand new. There are a lot of improvements in this. There is still some basic principles that come from previous work.

Q It's what you call a first generation system, isn't it?

A I guess so.

Q You know do you not, Mr. Hofacker, that there are many existing and many proposed and many pilot-planted and many experimental pollution control systems for coal-fired thermo generating stations which remove substantially more particulate matter and sulphur oxides than your system proposes to do?

A I do not know that sir.

Q You don't know that?

A No, sir.

Q Have you reviewed the systems that are in operation around the country or that are being pilot-planted, experimented or demonstrated around the country?

A No, sir.

Q That's why you don't know?

A That's right, sir.

Q O.K. I believe you told us last Friday that there has only been one trend base estimate received from the Bechtel Corporation, is that right?

A That's normal. Yes, sir.

Q What is also normal is that there is a constant revision in that same trend base estimate, isn't there?

A There are -- I don't think they call them trend base estimate revisions, I think they call them forecasts.

Q Don't you have something you call a revised trend base estimate?

A I didn't think it was called that. If we do, I am in error.

MR. SHENKER: I would like this marked as DNR Exhibit #13.

HEARINGS EXAMINER: Very well. Will you mark it please?

Q Do you recognize DNR Exhibit #13, Mr. Hofacker, as being taken from those which you brought to this proceeding?

A Yes, sir.

Q The first page has the trend base estimate of July 1974 from Bechtel?

A Yes, sir.

Q The second page has something called a revised trend base estimate, October 10, 1974?

A This may very well be a revision within the Montana Power Company and not Bechtel.

Q What you have as the second page of Exhibit #13 to the DNR is a table of the revised cost estimate for Units 3 and 4 dated April 8, 1975?

A That's what it says, sir. Let me see that first page, may I again please? As I said, I think this is probably our document and this came from their document, I believe.

Q If you put the two of them together because that is the basis from which you compared your figures in Exhibits 12 and 13?

A Yes, sir, but we have taken their trend estimates and made a lot of studies but it's still the one trend base estimate that they provided us -- that Bechtel provided us.

Q And do you believe those 1975 revisions was related to the revision before you compared Exhibits 12 and 13?

A I don't know that to be true. It could very well be. If the numbers agree, it is.

MR. SHENKER: We'll offer #13.

MR. BELLINGHAM: No objection.

HEARINGS EXAMINER: DNR #13 admitted without objection.

Q Just to clear up a few points, Mr. Hofacker, I think you have told us that your base load and load forecasting utilizes a linear multiple regression equation, is that right?

A I don't know that I said that, sir.

Q Well, if you did, that wouldn't be true. What you actually use is an exponential expansion?

A Yes, sir, I didn't say the first one.

Q O.K. With respect to that same Exhibit 12 you know, do you not, that what Mr. Davenport used to estimate transmission line cost was a cost per mile estimating distance for the line by reference maps?

A For distance?

Q Yes.

A It would have to be maps.

Q And in order to collect the cost data, he had talked with other companies which had built 500 kv lines and other agencies which could give him assistance?

A Yes, sir.

Q And you know that Mr. Davenport's calculation of capital costs for transmission lines ended in June of 1973?

A I don't know that it did. I think there has been calculations since that period of time for the 500s anyway.

Q By Mr. Davenport?

A I assume by him, but maybe it was by somebody else.

Q The various economic studies that have been conducted with respect to Colstrip 3 and 4 are in effect, projecting different shares of 3 and 4 than the present proposal which was the basis for your application?

A Yes, sir, because we had a different mix of partners initially.

Q Did you participate Mr. Hofacker in the answer to the question as to what the cost would be for transmission facilities as answered in the interrogatory served upon the Applicants?

A No, sir. The number was put in by other people.

Q Mr. Davenport among them?

A He could well have been. It could have been Don Gregg, I don't know who put it in to be honest with you.

Q Would you accept their conclusion with a figure of $189,000,000 for transmission facilities?

A As correct as of that time yes, sir. That was before the delay.

Q That was in February of 1975?

A Yes, sir.

Q In the economic studies performed by Mr. Davenport where a number of alternatives initially had been considered, it soon became the case that your alternatives boiled down to only Colstrip and in fact only Colstrip was used for your studies to meet base load. Is that correct?

A The economic studies prior to 1 and 2 or prior to 3 and 4?

Q Prior to 1 and 2.

A The result of the studies was that Colstrip was the place.

Q The decision to construct Colstrip was made in 1971 and at that time Mr. Davenport was told to work on a plan which would take care of Montana Power's needs through 1985, is that right?

A Yes, sir.

Q And at that time he was told to consider gas turbines, not as an alternative, but as a supplement to meet peak demand?

A Yes, sir.

Q And in terms of meeting base load only Colstrip was to be considered?

A Because --

Q Is that true?

A Yes, sir. Because we had gone through that exercise before and we don't have enough time to get all the studies done we'd like to do anyway.

Q In terms of computing your coal costs by rail, in 1973, rate quotes were received by you from Burlington Northern?

A Not by me, sir.

Q By Mr. Davenport?

A Yes, I should believe he received some or Mr. Blankmeyer, one or the other, but I believe Davenport.

Q At that time Mr. Davenport participated with another gentleman who has since left the planning department, on the study of shipping coal from Colstrip to Boardman, Oregon?

A I -- whether -- that is absolutely correct I'm -- I know there was a study of coal to Boardman and one specifically to Portland General Electric.

Q I am talking about the one by you - the Montana Power Company? Done by Mr. Davenport and another gentleman who has now left the planning department?

A It may very well be, sir.

Q Who's the other gentleman?

A The one I can think of leaving the planning department was Erv Hedegaard.

Q O.K. Now in terms of the plant factors and availability of the resources of the Montana Power Company, it is true, is it not, Mr. Hofacker, that of all of your facilities, which are of course mainly hydro, that the plant factor is lower for the Frank Bird steam plant than for any other facility?

A As planned, it is. It's a reserve only unless we absolutely have to have it.

Q And the availability is also the lowest for the Frank Bird steam plant.

A Availability is a very elusive term, sir. It depends what you base it on. I am sure the availability was much higher than the times it was used.

Q Well, your definition of availability is a percent of hours that the plant is connected to load, availability figures for some of your units therefore, take into consideration when they are connected to load, if at least one unit is connected?

A That's one definition of availability to pick up load. Now normally when you talk about a plant, when you say availability, you're talking on an annual basis whether you are hooked up to carry a load or not, it's available for carrying loads for whatever percent that you want to put on it.

Q The J. D. Corette steam plant would have the next lowest availability, would it not?

A There again, the availability I believe that you're looking at was based on the number of times it was actually supplying load, and there were times when I am sure that it was not and planned not to.

Q In terms of the plant factor, the J. D. Corette steam plant would have the second lowest plant factor after the Frank Bird steam plant?

A Again because it was an entirely base load, sir.

Q That is true, is it not?

A It is true. We put it in base load that plant factor will come out.

Q In terms, Mr. Hofacker, of your announcement of the delay of Colstrip Units 3 and 4, you see if we have the sequence correct. On January 17, 1975, by letter you advised the Department of Natural Resources of the roll-back in the schedule? Right?

A I believe that's the date, yes.

Q That followed the meeting on January 14, 1975, by representatives of the Montana Power Company and a representative of the Department of Natural Resources at which time that representative asked if the schedule had been changed, noting that you had made some comments at a public hearing on January 9, 1975.

A check was made and the Department representative was informed at that time that it looked like you were going to have to make a change in your schedule. That's how that happened isn't it?

A I wasn't personally involved with that department and it could very well have been.

Q But you knew did you not, Mr. Hofacker, some time before January of 1975 that the project had been delayed although Bechtel, for example, had been instructed not to let that be known?

A It had not been firmly delayed. We were looking at the possible effects of delay if it should occur, as I recall.

Q It had been unofficially delayed?

A I wouldn't even say unofficially delayed, sir.

Q Did you tell someone from Bechtel that it had been unofficially delayed?

A I don't recall that I did.

Q But you did tell Bechtel by December of 1974 they were supposed to minimize all costs until after the permit situation was firmed up from the state and federal authorities, which would be some time around October of 1975?

A I am sure we did that yes, sir.

Q And that of course included their suspension of inspection efforts?

A Inspection efforts where, sir? In plant? I'm not sure what inspection they were doing?

Q On the Unit 3 and 4 project?

A There was nothing going on on the project.

Q Do you know Mr. T. I. McHugh of Bechtel?

A No, sir.

Q We had some little discussion, Mr. Hofacker, on the comparative advantages of AC and DC lines. Of course it is true, is it not, that before you selected the C. T. Main Company to build the proposed AC lines, you did have the suggestion made to you from the General Electric Company that you really should go with DC lines?

A Yes, sir, but the basis of their premise was unsound, in our opinion.

Q Because the load wasn't going to be big enough?

A No, sir, because it did not take into account the incorporation of the AC into an existing grid west of Montana.

Q You mean the DC into an existing grid?

A That's the one they proposed, DC, they did not take into account the limit -- or the minimizing -- of investment by utilizing AC which could be incorporated at the eastern terminus of the grid, thereby not requiring a capital expenditure west of that point, other than one line.

Q Their view was that the DC line would be at least as reliable as an AC line proposal?

A I believe that was their point, yes, sir.

Q Where is Sandpoint?

A In Idaho.

Q Where is Bonners Ferry?

A That's Idaho also.

Q Were you aware of the fact that Washington Water Power Company had obtained, from the Burlington Northern Railroad, some quoted rates for freight on rail-haul from 664 rail miles and

699 rail miles respectively?

A I didn't know that they had received rate proposals, no sir.

Q You did not know that?

A No, sir.

Q Did you not know that they had received a rate of $5.50 per ton using Washington Water Power cars on the 664 rail mile?

A No, sir.

Q $5.85 per ton using Washington Water Power cars on the 699 rail miles?

A No, sir.

Q Well, you selected Mr. Hofacker, correspondence between the Department of Natural Resources and the Burlington Northern Railway on rate information, did you not also obtain the same correspondence in the files of the Department of Natural Resources of copies of similar correspondence between the Burlington Northern and the Washington Water Power Company?

A I had nothing to do with the obtaining of those copies. The only copies I saw were the ones that were provided to me. I didn't know that we had those other copies.

Q Who selected them for you?

A I don't recall who was over there. Somebody from our Company, but I don't know who the individual was.

Q You never inquired of the Washington Water Power Company about those rates?

A I did not.

Q Are you aware of the fact that 5 million tons of coal per year will be shipped from the Kerr-McGee Mine near Gillette, Wyoming to fire two 800 megawatt units near Redfield, Arkansas?

A I have heard something. I didn't remember the specific names. I heard of moving some coal from Wyoming, yes sir.

Q That's a distance of some 1,280 miles?

A Yes, sir, over which there is no transmission capability now.

Q Are you aware that the Decker Mine in Decker, Montana will be shipping to Commonwealth Edison in Chicago approximately 7.0 million tons over a distance of over some 1200 miles?

A Yes, sir, again across an area that there is no transmission grid of any consequence.

Q But you can always build a transmission grid?

A Yes, sir, you can but the economics of starting from scratch is different than the economics we had in our situation.

Q How many transmission lines would it take to transmit an equivalent amount of energy from Redfield -- from Gillette, Wyoming to Redfield, Arkansas?

A I don't know. It depends on the voltages you take and how much reliability you want, sir.

Q How many would it take to go from Decker, Montana?

A The same reply again. I don't know without making -- there has to be decisions made before you say how many lines or what size.

Q By the way, speaking of voltage, it's true, is it not, that one of the ways for conservation of energy as well as to decrease voltages in the transmission or delivery of power?

A If I understood you good -- I think you had it in reverse. The way to minimize is to increase voltage so you don't have to build so many lines.

Q Assuming you already have an existing system, you have existing transmission capacity --

A Yes, sir.

Q If you want to conserve energy in that system if you decrease the voltage on delivery you will conserve on energy, will you not?

A Decrease the voltage on delivery to conserve energy? I don't think you're stating yourself properly, sir. Because it doesn't make sense to me at the moment.

Q Is it not proposed in the state of New York that a reduction of voltage by 8% would be a useful way of conserving on energy?

A Oh, in that basis, it's a way of conserving energy to a degree, for only the resistance load but for any motor loads, in fact, it would increase the requirements on motor loads.

Q Yes, but for resistance loads you would reduce your actual consumption of energy by reducing the voltage?

A Yes, sir.

Q Now, getting back to the supply of coal from this part of the world to other places, you are aware, are you not, that the distance between Colstrip and Northern States Power Company's purchase of 3.03 million tons of coal in 1975 is some 1245 miles?

A That's actually the same as the previous delivery you were talking about sir.

Q And the Minnesota Power and Light Company is currently buying about 1.9 million tons a year from the Peabody Mine at Colstrip?

A I believe that's the number, yes sir.

Q And that's 837 miles in shipment?

A Yes, sir. Again across an area of which there is no transmission of any consequence in existence.

Q So you have to build transmission lines?

A Yes, sir, and they are doing that from plants in North Dakota into the midwest, if you look further on your studies.

Q Some of the plants in the midwest are burning Montana coal now even though they were not designed to burn that Montana coal, isn't that right?

A That's right because it was a lower sulphur content. I am sure that it reduced the capability of their plant but it was either that or not run, I guess.

Q The Wisconsin Power and Light Company will have a couple of 527 megawatt units by the end of 1978 at Columbia, Wisconsin, a distance of 1,070 miles by rail where they will be burning Colstrip coal?

A Yes, sir.

Q And the Westmoreland Mine will be supplying 4 million tons of coal to a number of midwestern utilities this year?

A Yes, sir.

Q The St. Clair plant of Detroit-Edison consisting of 7 units with a combined capacity of 1800 megawatts will also be burning coal from Decker, and a new 1350 megawatt plant being built near the St. Clair plant is being built to burn Decker coal exclusively, isn't that true?

A Yes, sir.

Q And that route involves 800 miles by rail and 500 miles by water?

A Yes, sir, again across an area where there is no transmission now.

Q Is it your testimony, Mr. Hofacker, that there are no transmissio lines in the states of Michigan and Wisconsin?

A No, sir. Adequate transmission to move this across the area until they get into the midwest. When you get into the Minnesota area you start to get into some transmission, but you have a lot of miles before you get there.

Q Minnesota, Wisconsin, Michigan; they have more than adequate transmission lines to take that kind of power, don't they?

A I'm not in a position to say yes or no to that, but I know they have lots of transmission, but whether it's adequate or not, I don't know.

Q Have you Mr. Hofacker, studied the use of a coal slurry pipeline for delivering coal as an alternative to shipping coal by rail?

A I am aware of studies but no, we did not look at such a study, for the movement of Colstrip coal.

Q Well, there really are, Mr. Hofacker, are there not, numerous alternatives for the transfer of coal into energy which include mine-mouth generating stations, rail-haul of coal to some other generating capacity, the gas -- gasification -- of coal and the transfer of slurry pipeline to some other generating facility?

A Yes, sir, and I presume you will discuss these with Mr. Bob Labrie.

Q I am looking forward to that opportunity. I think I have but one more question for you, Mr. Hofacker. Would you not agree with me sir, that effective conservation thus decreasing the loads that are actually serviced will give all of us an opportunity to make better energy decisions in the future, which will afford energy users more opportunities for the use of their money?

A I have to say so, that sounds just like motherhood.

Q You are in favor of it?

A I said I'd have to agree.

MR. SHENKER: Thank you very much. I have no further questions at this time.

HEARINGS EXAMINER: Very well, Mr. Meloy. You may cross-examine.

Cross examination of Mr. Roger A. Hofacker

By the Northern Cheyenne Tribe, Inc.

By Mr. Meloy

Q Mr. Hofacker, did you hear Mr. O'Connor's testimony last week, I guess it was, in answer to Mr. Shenker's question as to whether he liked the Montana Utility Siting Act?

A I was present. I don't know whether I remember all the words he used.

Q Well, he said he didn't like it very much and I am wondering whether you agree with him?

A I -- there are certain aspects that I dislike. There are other aspects that I think are fine.

Q Well, you're a professional planner. What things about the Utility Siting Act don't you like?

A Well, in the initial one, for instance, there was no termination date. We never knew when you'd have a yes or a no, and that was the main objection in my book.

Q But with regard to those aspects of planning which the state of Montana should look to determine a utility site, it is then your opinion that that part of the Act is a reasonable method of planning?

A In principle, I think the application needs some improvement, sir.

Q The application needs --

A I mean the manner in which the data has been requested and handled and so forth but that perhaps will come with increased expertise in the Department of Natural Resources. They were new, and there were problems in learning just how you go about these things.

Q What kinds of things do you do as Chief Planner for the Montana Power Company? What -- in other words what is the scope of your planning responsibilities within the Company? Is there a specific order to you as to what kind of things you are supposed to look at; do you have in your own mind a subject list of items that you would look at with regard to any given power plant?

A No list per se.

Q What kinds of things do you look at as Chief Planner?

A Well, -- first you start when you deem that you need resources and start from there looking at all the alternatives available to you to supply those resources. From an economic, environmental, and a physical - actual physical - how long does it take to get it on line and so forth.

Q Is it -- You didn't mention the sociological or cultural implications of a decision to site a facility? Is that one of the aspects -- ?

A I include that in environmental in my own mind, it's one package with many facets.

Q Are you the person in the Montana Power Company who is the fellow most responsible for those decisions, other than policy matters, is there anyone above you with regard to those planning functions?

A Our executive vice-president and our president.

Q Who is your executive vice-president?

A William Coldiron.

Q And he has -- he makes decisions about planning that either supercede or enter into the kind of decisions that you make in your planning?

A He has every right to.

Q Well, does he, normally?

A Yes, sir, from time to time, he expresses an opinion and what he sees as the policy that we should follow -- he's not alone in that. There is a policy committee that I have so stated from this stand, that sets policy and assesses the activities that are going on in the Company.

Q If there is one person in the Company who is primarily responsible for the most -- responsible for planning -- would it be you?

A From the engineering aspect, yes, sir.

Q And that includes those items that we talked about earlier. When you say engineering aspects, you are talking about the environmental aspects?

A The ability engineering-wise to meet the environmental requirements.

Q Throughout your testimony you continually refer to economic analyses both in terms of back-up material for your exhibits as well as in answer to other questions that had to do with primarily load forecasting and my question is, do you have anybody on your staff with a degree -- with a major in economics?

A We have a man with a major in mathematics, with economic options and every one of our engineers have engineering economics as part of their formal training.

Q Do you have --

A I had engineering economics as part of my formal training and in the two management schools I went to, it was very strong in economics.

Q What was the extent of your formal education in economics?

A As I said, I had courses in --

Q How many courses?

A I believe I had, over a period of two years, I forget the weight on them. It seems like they were two credit courses, I believe. Maybe a dozen credits in economics of one sort or another. Part of it was economics and not engineering economics. Dr. Renne was the instructor I had in economics-

Q Did that include upper division courses in economics?

A I don't know what the courses are in the upper division, no, sir. I don't claim to be an economist.

Q Does anyone on your staff claim to be an economist?

A No, sir. But there's alot of training that has been acquired so that we are pretty darn good engineering economists.

Q Well, the reason that I'm asking these questions is that a substantial amount of your testimony is based on general economics and not engineering economics. For example, you stated to Mr. Shenker that someone made a decision that load forecasting would not include downward economic turns in the economy. Now, did you make that judgment?

A We didn't -- I didn't say that, sir. We did show a downward trend in our load forecast because of economics.

Q After 1977?

A No, sir, because the economy of the nation, as best we could determine, appeared it would be coming back, and you're reading everyday in the paper they're improving.

Q That's my question. When you say "we", you're meaning you and your staff, is that right?

A Me and Mr. Talbott of the Marketing and our management people, our policy people, all agree that this is probably what was going to happen.

Q Any of those people claim to be economists?

A They don't have to be, sir.

Q They don't have to be economists?

A They have to be knowledgeable of business economics, yes, sir.

Q But they don't have to be economists?

A No, sir, and you can look to economic consultants if you want to go that far and our Company has at times. I don't know what the most recent one is.

Q Did you talk to any consultants who were either economists or had economists on their staff with regard to load forecasting after 1977?

A We had no reason to, sir, in our opinion.

Q Because you had made that judgment yourself within house?

A We, within house, yes, sir, based on what we know of the utility industry.

Q In August of 1972 you signed a letter of intent -- preliminary letter of intent with regard to the two units, 3 and 4?

A As I testified before, we did, sir.

Q And in January of 1973 you renewed that letter?

A Yes, sir.

Q Why was it that you renewed it?

A Because there were statements in the original one that they could terminate at the end of the year and it would have to be renewed to carry it on. It was a study, sir, an agreement to study and we thought initially the study would be completed by the end of the year and it was not.

Q Then in January of 1973, you continued the study?

A We were -- we never stopped studying, yes, sir.

Q Did you -- I think you answered Mr. Shenker in the negative in response to his question, "Did you participate in the presentation of the utilities' position on the Siting Act during its passage through the Legislature" and you answered no?

A I was no party to it.

Q Did you attend any of the committee meetings?

A No, sir.

Q Did you know that Colstrip Units 1 and 2 would not be covered by the Utility Siting Act at the time that decision was made?

A What decision, sir?

Q The decision of the Legislature not to include certain plants, construction of which had commenced prior to a certain date?

A Upon completion of the legislation I was aware of it, yes, sir.

Q You were not aware of that decision as it was being made?

A No, sir, I imagine I assumed there would be a grandfather clause of some sort, but I didn't know what it would be.

Q You didn't have anything to do with that grandfather clause?

A Not a bit, sir.

Q Did any of the people with whom you were communicating as -- well, let me ask a question before I ask that one. Were you chairman of the Steering Committee? When did you become chairman of the Steering Committee?

A I believe it was in early '72 -- the spring of '72 -- was when the -- well, it may have been late '72, but I -- I don't remember exactly, sir.

Q To the best of your knowledge, were the people who were representing the Montana Power Company's position before the Legislature on the Utility Siting Act, did they know what your plans were with regard to Colstrip Units 3 and 4?

A I don't personally know that they did, but I assume they knew what our planning activities were.

Q You didn't tell them?

A I did not personally tell them, that I recall, sir.

Q Did they know that a letter of intent had been signed in August of 1972? "They" referring to the people who were -- ?

A I would assume that they would because our management knew this and had signed it so I would guess that they would convey that on but I did not, personally.

Q But as far as you know they were aware of it or they probably were aware of it?

A I can't answer that. I don't know that they were aware of it. I said I would have to assume that and I don't know, because I did not deliver it to them.

Q You, as chairman of the Steering Committee, did not tell them that you were involved in a letter of intent with regard to Units 3 and 4 in August of 1972 and then again renewed in January of '73?

A No, sir, I recall no conversations as chairman of the Steering Committee, telling them this specific matter, no, sir.

Q Now, with regard to Applicant's Exhibit 9, I have just a few questions about that?

A I have it in front of me, or I have my copy I should say.

Q Did you tell us why there was no line drawn between the actual data in the total load information you have on this exhibit?

A I don't understand your question, sir.

Q All right. You have, with regard to the base load data, a red line which is drawn essentially in between certain items of data and each year on the chart?

A Yes, sir, it's a best fit curve.

Q Why did you not use a best fit curve with regard to Exhibit 9 on your total load data?

A As I explained, the total load is not -- it's difficult to predict on a trend basis because it varies so widely so we take the block loads off that vary up and down and get to a base load which is trendable and then add back in, at that specific period of time that we're making a forecast, the best information we can receive from people, such as the Anaconda

Company, primarily, as to what their future activities hold for them for the next whatever years that they feel firm that they're going to be.

Q Are there not methods of regression analyses more sophisticated than the line that best fits to analyze data that fluctuates like that, such as higher polynomial analyses or -- ?

A It may be more sophisticated but I don't think the results are going to be any better, at least that's our opinion, for the base load because the base load, as you can see, has followed very closely that curve. I don't know of another curve that you would draw that would go through that period of time hitting the actual loads as accurately as they do here.

Q Then what happens in 1974 through 1980?

A We'll have and have had in the past, excursions from the trend, and these excursions, as we show there were based on our assessment of what the economics for the next two to three years were going to be in the state of Montana, or in our service area I should say.

Q But your least squares analysis doesn't seem to bear out with regard to data from '74 to '80?

A The least squares analysis will be later applied to history as it occurs, sir, and we assess it, as I stated to Mr. Shenker that by 1980 the factors that we had available indicated that our load would be at least back to the projected -- the least squares projection. That was our judgment based on the information we had available.

Q With regard to Exhibit #12 -- or # -- yes, with regard to Exhibit #12 -- ?

HEARINGS EXAMINER: Is that Applicant's Exhibit?

MR. MELOY: I am sorry, Mr. Davis. Applicant's Exhibit #12.

A I have a copy in front of me.

Q I believe that you testified, and I think that the information is on page 4, although I have a different number written down in my notes than you have in Exhibit 12 on page 4, that with regard to the cost per mile of 500 kv transmission lines on page 4 you have 745 miles at 199,216 dollars per mile. Now I have in my notes 152,200 per mile. What is the difference?

A That was the current price based on the quotations we have on constructional material for the Ana -- or for the Colstrip-Broadview double circuit 230 kv line that can be converted to 500 kv and we applied the escalation factor to the center of gravity for the line and it comes out to $199,216 per mile.

Q That includes the actual cost of acquisition of the line?

A That includes the history we have had to date on the Colstrip-Broadview line, yes, sir. It includes the right-of-way purchase estimates as well as what we thought condemnation might be and so forth.

Q Does that include legal costs?

A Yes, sir. It includes all costs applicable to the line, yes, sir.

Q When was the Colstrip to Broadview line right-of-way condemned?

A Just very recently but we went to -- we looked to previous experience that we've had in condemnation suits and we had had contact with many of the property owners along the lines so we had a feel as to what prices were going to be and we used that and made our estimate.

Q And that includes -- now let's see -- Colstrip to -- did you include in that number the costs which now result by virtue of the new constitutional provisions, which requires the condemnor to pay the condemnee's attorney's fees? Did you include that? That's new.

A I am sure it must have been but it is going to be insignificant compared to the other costs, sir, but I am sure this was considered to be part of the right-of-way acquisition costs. We have had legal fees in the past that we've paid.

Q Well you don't -- you haven't had those kinds of legal fees?

A I am sure we haven't, sir. I am sure we haven't.

Q But you know for a fact that those were included in that number?

A I can't say for a fact, they were.

Q Who can say, for a fact?

A Pardon?

Q Who can say, for a fact, that they were included?

A I don't know that anybody can but it was our best judgment of right-of-way costs, court case and so forth at the time the estimate was made.

Q Well, $199,216 is a relatively -- it's not a specific figure, but somebody must have put those numbers together?

A These are in thousands of dollars and an amount was in there for right-of-way acquisition for engineering, for equipment and for everything else so we had -- it came to this total, sir.

Q Who might I inquire of to determine the basic elements of $199,216?

A We can get that in back-up data as to the number that was put in.

Q Well, who put it together?

A Mr. Davenport.

Q Mr. Davenport?

A On advice of our right-of-way people, among other things.

Q Now, I have a question with regard to "Mr. Clean". Could you tell us again who "Mr. Clean" is?

A Mr. Carl Anderson.

Q Why is he called "Mr. Clean"?

A Well, that's a term that's been used in a lot of places in industry for a man whose prime responsibility was to make sure you took care of the environment.

Q O.K. And in response to a question from Mr. Shenker, you said that you don't remember any cautions from Mr. Anderson with regard to environmental problems on the Colstrip project, is that right?

A I don't remember specific cautions. I believe I recall at one time he made suggestions that perhaps we should have a study of this and of that, in that form it would be a suggestion.

Q If he had cautions to propose, to whom would be propose them normally, with projects the size of Units 3 and 4?

A He would propose them to the engineering department, to the management, to the right-of-way department, I suppose.

Q Would you normally expect him to report them to you?

A Yes, sir.

Q Then one can assume that since you don't remember any cautions from Mr. Anderson, then in Mr. Anderson's opinion, there probably weren't any?

A I misinterpreted the intent of your question. I'm sure that we discussed environmental matters -- I know that we discussed environmental matters and suggestions from him, and others, as to what studies we should have to see that we were compatible with the environment, but now as far as cautions, the term I use there, if something were going on that maybe he thought we overlooked that's where I'm talking about cautions, and I don't recall at any time that he thought we were overlooking something. He suggested some studies that we should embark upon to cover these areas, to know what was going on. Now, if you want to call this cautions, O.K., he cautioned but it was advice.

Q So what you meant by the word caution was not any potential adverse environmental impacts from your proposed project, but caution meant, when you answered Mr. Shenker's question, something that you may have overlooked in your normal course of business planning?

A I don't agree with the way you interpreted that. If he thought there was going to be damage to the environment somewhere that we had perhaps overlooked he would so inform us.

Q And you don't remember any of those cautions being presented to you?

A Sir, I'm at, on the average, 4 to 5 meetings a day, every day of the year and I can't remember everything that takes place.

Q Did he suggest any studies to you -- did he suggest -- you did say that there were certain items which he may have suggested to you with regard to environmental impact and that you might want to do a study on it?

A I am sure that there probably were.

Q What?

A I don't remember specifics, sir.

Q You don't remember specifically? Did you do any studies with regard to environmental impact at the proposed project?

A I listed a whole series of them with Mr. Shenker the other day.

Q Did any of them have to do with the social or cultural impact of that proposed project on the people that live in the vicinity of the plant?

A I believe in Westinghouse's investigations they got into that area, and so addressed it in the study that was prepared and presented to the Department of Natural Resources and Carl Anderson worked with Westinghouse's environmental system department.

Q Of course, a study that investigated the impact of a project of that size couldn't ignore those kind of considerations, could it?

A I agree with you.

Q Do you have anybody on your staff with a degree in sociology?

A I bet if we went to the Montana Power Company's employees there would be somebody, but I don't know of anyone on my staff.

Q Well, on your staff? Do you have anyone on your staff with a degree in agricultural economics or with a degree in agricultural engineering?

A I'm sure that we do. Not on my staff but he's available in the Company, that has -- two of them I think have degrees in in this area that I can think of. Furthermore, our Tom Smith and his degree in geography has a lot of sociology involved in it.

Q Did you ask him to do any written studies relative to the economic effect on agriculture, the economic impact by the proposed plant on agriculture in that area?

A I believe there have been studies on the effect on agriculture in the area and the reclamation of the land but I did not direct that these studies be done. Western Energy, for one, did.

Q Western Energy did a study of the effect of your proposed project Units 3 and 4 on the agricultural economy in that area?

A No, sir, they did it on the effect of mining and there might be studies that had to do with the effect of the plant down there but I am not aware -- .

Q You are not aware of any of those?

A But it would be inherent, I think, in the whole impact.

Q If some had been done, would not the chief planner for the Montana Power Company know about those studies?

A Not necessarily so. I would hope that I would.

MR. BELLINGHAM: The record should note that we now have another guest, Mr. Jack Hallowell. That is two for the day.

Q Mr. O'Connor told us that he instructed you or someone on your staff, or someone that had planning responsibility, to determine the environmental impact of the proposed project on the Northern Cheyenne Reservation. Did you do -- did you follow those instructions?

A I don't remember such instructions, sir, so evidently they weren't made to me.

Q To whom would they have been made with regard to Colstrip Units 3 and 4 if not to you?

A There could have been several others.

Q Could have been who?

A Several other people.

Q Who would they be?

A There might have been something to Carl Anderson, for one. Maybe to Mr. Coldiron, for one, in the legal department. Maybe to Mr. Rogers who is our -- maybe some suggestion made to him. Maybe to somebody in our engineering department, but I don't remember specific instructions to me. I know that they were included in the initial efforts as far as keeping them informed and invited to attend a session that was had particularly for that purpose.

Q Do you know whether any written studies were done pursuant to those instructions by anybody with regard to the specific impact of your proposed facilities on the Northern Cheyenne Tribe or its Reservation plans?

A This -- any effect on there would be inherent of the environment studies effecting the plant which looked for the area around the plant and to the effect it would get to the Cheyenne Reservation, they would be included.

Q And again, as a study which did not consider the impact, would probably not be a very good study, right?

A Well, yes, in fact it would not but the studies included the areas regardless of the boundary lines. Taking the meteorological data and the engineering data and studying it regardless of whose ground it was on.

Q How about socio-cultural data? Did anyone do any specific written studies on the impact, adverse or positive, on the proposed plant, of the Northern Cheyenne Tribe?

A Well, initially, we assumed it would be an economic boost for them and providing employement, and I would assume as Mr. O'Connor did, that it was the Department of Natural Resource's responsibility to go into the details of the social effect of this plant in the area. That's part of what the Siting Act says; that they will assess this.

Q But that was not part of your responsibility as a person who proposed this project?

A Only to the extent that we had information that might be useful to them, as I understand it, sir.

Q Well, you certainly wouldn't propose a project which had a substantial adverse impact on the people in that area, would you?

A And in our judgment, we did not.

Q On what basis did that judgment occur if you didn't do any studies?

A Sir, we -- our assessments that providing economic resource in the area was that it would be good because they were looking for jobs and as Mr. O'Connor said, they had been in seeking a plant on their reservation not too long prior to that, so you would assume that this would be a good effect, if they had been asking for it at one time. Now they may have changed their mind later.

Q Interrogatory #78 of the interrogatory submitted to the Applicants says "What Indian Reservations and what Indian tribes holding lands by treaty with the United States do you project to be affected by the proposed Colstrip generating Units 3 and 4, their attendant facilities and transmission line from the generating units?" Did you participate in the answer to that question?

A I did not.

Q Do you know who did?

A Somebody in our Company did, sir.

Q Do you have an opinion on that question as chief planner for the Montana Power Company?

A I may have an opinion on the question.

Q Do you expect the Cheyenne Tribe to be affected in any way, by Units 3 and 4?

A Certainly. As I indicated before.

Q Oh, you do think that they will be affected by Units 3 and 4?

A I know positively, there would be employment opportunities that they didn't have before.

Q But that's the only way in which you think they will be affected, is that right?

A Our assessment to the extent of knowledge we had when we made the application was that environmentally we would not be affecting the Reservation.

Q There would be no adverse impacts?

A To our knowledge, there would not be.

Q And that was based on what?

A Looking at the general area, wind directions and so forth, without a lot of scientific studies, sir.

Q Oh. Scientific studies with regard to air pollution potential?

A Yes, sir.

Q No studies with regard to the anything that you can recollect?

A No, sir, but with the information as I said before, they had been seeking economic opportunities, from not only us but others.

Q Can you name the study that considered the air pollution impacts of the proposed Units 3 and 4 on the Northern Cheyenne Tribe and its Reservation lands?

A As I said, we did not delineate the border lines. It was in the area of Colstrip, the effect of the studies, regardless of whether it was Mr. McRae's property, Mr. Bailey's property or whose ever property it was; it was the entire area, sir, regardless of indigenous culturals in there.

Q Then you did not even do an air pollution study with regard to the impact --

A I did not say that sir.

Q Specifically on the Northern Cheyenne Tribe?

A I did not say that, sir. I said we did it for the area and to the effect -- and the area that would be affected would be studied and now I can't carry this question any further because I was not involved with the study, sir, but there are other people that can expand on what studies they were.

Q O.K. Can you name the studies?

A No, sir. I know studies made, but I can't name the studies, no, sir, because I was not personally involved with them.

Q Were they written studies?

A I don't know that they're written. We have studies now.

Q Are they written studies?

A You'd better ask Mr. Labrie because I'm getting an area-- I don't know, sir. I'm sure there's a lot of data.

MR. MELOY: Mr. Davis, in my testimony--or in my cross-examination, in the same way that --

HEARINGS EXAMINER: I didn't get the rest. Do you want to adjourn until after lunch?

MR. MELOY: Yes.

HEARINGS EXAMINER: Yes. Let's adjourn until 1:30. Then if you have any more questions you can pick them up.

(Recess 12:00 Noon)

(Following the lunch recess, the hearing reconvened at 1:30 P.M. on June 4, 1975)

HEARINGS EXAMINER: Very well, we're back on the record, and we'll proceed with Mr. Meloy's cross-examination of Mr. Hofacker.

Continuation of Cross-examination of Mr. Hofacker by Northern Cheyenne Tribe, Inc.

By Mr. Meloy (Cont.)

Q Before lunch, in answer to one of my questions with regard to impacts of the units on the Northern Cheyenne, you testified that, did you not, the Northern Cheyenne wanted power plants on their reservation, did you say that?

A Yes, sir, as I understand the meeting that was held prior to our establishment of units 3 and 4 where the Cheyenne group met with George O'Connor and Bob Labrie and others concerning this, and encouraging their coal and water be included in our studies as to future plant locations.

Q That their coal and water be included in your studies of future plant locations?

A In our considerations, yes, sir.

Q How do you get from there to your statement that they wanted power plants on their reservation?

A Well, I believe the proposal was made in that, why don't you build the plant on the Cheyenne reservation; we've got plenty of coal and plenty of water.

Q Did you attend that meeting?

A I did not, sir. As I said, I understood this is what took place.

Q Do you understand that from information you got prior to this proceeding, or did you base that on information you got when you heard Mr. O'Connor testify?

A I had heard that prior to this hearing, yes, sir.

Q Did you hear Mr. O'Connor testify on that question?

A I heard Mr. O'Connor testify, yes, sir.

Q Well, if you were listening to Mr. O'Connor, he told us that it wasn't coal plants that the Northern Cheyenne were interested in, but rather they were interested in the development of their water. That was his understanding of the meeting. Now, do you agree with that?

A Well, then my understanding is incorrect if that's the correct understanding, and I just have to stand on that.

Q But your information was gleaned from either Mr. O'Connor or Mr. Labrie, is that right?

A Yes, after they returned from that meeting.

Q Are you familiar, Mr. Hofacker, with a study entitled Electricity Demand in the United States: An Econometric Analysis, done by T. D. Mount, L. D. Chapman, T. J. Tyrrell, prepared as an account of works sponsored by the United States government under a National Science Foundation grant, published in June of 1973?

A I don't recall that specifically. I've seen, in a period of time, or heard of many studies, but I don't recall this one specifically, sir.

Q Well, perhaps I can tell you a little bit about what this study talks about, and your memory may be refreshed. Earlier, we were talking about load forecasting. Mr. Shenker, in his cross-examination, asked you about variables that were included in your method of forecasting loads, and either in the course of your examination or -- well, I'm going to back up a bit. Do you agree with Mr. O'Connor that increases in the price of electricity have an effect on the growth of demand for electricity?

A I'm sure that it must have some effect.

Q Did you take -- well, do you anticipate that there will be an increase in the relative price of electricity in the time period that we are concerned with and that you have considered in your exhibits on load forecasting?

A Yes, sir, and we considered in view of the increasing alternative sources of energy, too, the prices of those, and availability.

Q In your analyses and projections of load, did you take into consideration the increases in price of electricity on that demand?

A I just said I did.

Q How did you do that?

A We looked at it as compared to the prices of alternative sources of energy, as I just stated, sir.

Q You didn't use an econometric analysis as proposed by Mr. Mount, Mr. Chapman, and Mr. Tyrrell, did you?

A Not per se, although I recall seeing studies that didn't agree by almost 180 degrees as to what the elasticity was on the various categories of uses of power.

Q Well, how, then, did you measure the relationships between demand for electricity and other kinds of causal factors like price?

A We judged them against what appeared to be the price and availability of natural gas and oil or petroleum products, sir.

Q Well, I'm talking about the effect of the price of electricity on the demand for electricity. Mr. O'Connor and you both testified that there is an effect. I'm wondering how you measured that effect, what kind of an analysis you used to measure that effect?

A As a matter of judgment, sir, not by a computer.

Q Very good.

MR. MELOY: I have no further questions, Mr. Davis, at this time. I would participate, however, with Mr. Shenker in the possible recall of Mr. Hofacker with regard to depositions which we haven't received from Bechtel.

HEARINGS EXAMINER: Very well, you'll be permitted to. Mr. Warner, you may cross-examine on behalf of the Northern Plains Resource Council, Inc.

Continuation of Cross-examination of Mr. Hofacker by
Northern Plains Resource Council
by Mr. Warner

Q Mr. Hofacker, I would like to ask you a few questions on behalf of the Northern Plains Resource Council. You've testified at great length, previously, as to your approach to load growth and load growth forecasting, and do I understand your testimony correctly to say that you have not changed basically your method of load forecasting in the last twenty year period?

A In the essentials, we have not, no, sir.

Q And in preparing your load forecast, do you make any distinction as to whether new loads that may come on may be necessary loads?

A That is not in our jurisdiction to decide. If a customer says he wants loads, how do we -- we have no authority to say you can have power, because your use is going to be for such and such reason. We have no legal area in that matter at all.

Q In other words, this does not enter at all into your considerations of load growth forecasting?

A And it cannot, sir.

Q It does not?

A It does not.

Q Are you familiar, generally, with the history of prices in the utility industry in the Northwest?

A Generally speaking, yes, sir.

Q And, would you characterize them as not having risen appreciably for a considerable length of time until recently?

A Yes, sir, because costs did not rise appreciably until recently.

Q And recently, they have commenced to rise to some appreciable degree, is that correct?

A They have, with the introduction of steam, of the fossil units, yes, sir.

Q And at the present time, do you have a rate increase pending before the Public Service Commission?

A We do, as I testified the other day, sir.

Q That's in a fairly significant amount, is it not?

A Twenty-two percent, sir, the average increase in electrical rates.

Q Do you consider that there is a good likelihood of price increases being instituted in the future as well?

A If costs keep rising as they are, they would have to be, in order to stay in business.

Q Now, with respect to your contract for purchases of power, is it your testimony that in the past the Montana Power Company has satisfied their load resource requirements with the purchase of electrical power?

A We've satisfied to the extent that we'd buy them until we could bring a plant on that was adequately loaded. This has been a fluctuating matter through the years.

Q And isn't this true of other utilities in the Northwest area as well?

A Yes, sir, but, sir, there's got to be somebody to put generation on, if you're going to have a product to buy. Everybody can't buy and nobody put on plants.

Q It is a fact that other utilities have supplied their resources with contract purchases, is that correct?

A To varying degrees and for varying amounts of time, it's been that way since we've been in the business, essentially interconnected.

Q Mr. Hofacker, referring to Applicants' Exhibit 11A which sets forth the kilowatt hour sales for the past ten year period, 1964 to 1974, and has the kilowatt hour sales categorized in various categories, it's true, is it not, that industrial category of kilowatt hour sales is the largest category for the Montana Power Company system?

A Yes, sir, it is.

Q And residential kilowatt hour sales are next to the lowest categories of kilowatt hour sales?

A Well, on the graph there, they're, I think, third from the lowest; they appear to be somewhat larger than the commercial, but it's close.

Q You've testified previously to some extent as to agriculture sprinkler irrigation. Where in this particular graph would that particular category fit in to, if at all?

A Other industrial.

Q Under industrial?

A Other industrial, yes, sir.

Q Other industrial?

A Yes, sir.

Q Would the normal farm usage, residential and, say, electrical usage for farming operations be included under residential?

A Exclusive of the irrigation, yes, sir.

Q Now, with respect to the industrial load growth of the Montana Power Company system, you've also testified previously as to an aluminum plant in Thompson Falls, I believe?

A We have no aluminum plant that we supply a load to, sir. It's the Bonneville Power Administration at Columbia Falls that has the aluminum plant as their customer.

Q And that's supplied by Bonneville Power Administration?

A It is, sir.

Q What is the total megawattage on that particular plant?

A At Columbia Falls, I believe it's something in excess of 300 megawatts.

Q Are you aware generally of the presence of other aluminum plants in the Northwest?

A I know there are other aluminum plants in the Northwest, yes, sir.

Q And you talked previous about, I believe it's called, energy intensive industry?

A Yes, it's one of the energy intensive, yes, sir, in fact, I believe, the energy intensive -- most intensive, yes, sir.

Q Do you have any idea how many other aluminum plants there are in the Northwest area covered by the five Applicants' systems in this proceeding?

A I know there are several, like 5 or 6; maybe I'm wrong. One of the other Northwest Applicants might be more exact. I just know generally.

Q In terms of the plant at Anaconda at a 300 megawatt load, that would be a considerable portion of the total load of the Montana Power Company system at the present time, would it not?

A That's not our load, though, sir.

Q I understand that, but in comparison size-wise?

A It would be about a third to our present total peak, yes, sir.

Q Could you characterize for me the Montana Power Company system in comparison of the other utility Applicants in this case?

A It's the smallest system load-wise, but the largest area-wise.

Q It's the smallest system load-wise?

A Yes, sir.

Q In terms of comparing industrial to residential, does it differ from the other Applicants?

A I'm sure they must be different. I don't know the relationship of industrial to residential in the other companies, but ours this past winter was about 20 -- the Anaconda load was slightly less than 20 percent of our total peak last winter.

Q And would you agree that there's a higher percentage of residential use for the other four Applicants as compared to Montana Power Company system?

A If you mean higher kilowatt hour use per customer, that's true.

Q And percentage of number of -- well, I guess that would be the same as total kilowatt hour use.

A They have more customers and a higher use per customer, yes, sir.

Q In terms of population, would you agree that Montana Power system covers an area with a lower population?

A Yes, sir.

Q Considerably so?

A I'm not sure how much less than Washington Water Power, but it's lower than Washington Water Power, yes, sir.

Q And the other Applicants have a higher population, do they not?

A Yes, sir.

Q Would you agree that the center of load, as far as the Montana Power Company system, would be somewhere in the western part of the state of Montana?

A It would tend to be in the triangle of Bozeman, Butte, and

Great Falls, in that general area in there.

Q And similarly for the other four Applicants, would you agree that the center of the area of load would be located somewhere on the west coast, in Oregon or Washington?

A It would tend to favor the western portion of the area positively, surely, because of Seattle and Portland, by being out in that area.

Q Now, you've previously testified as to future references to price elasticity, and I take it that you are somewhat familiar with that concept?

A Yes, sir, I'm aware of the concept, yes, sir.

Q And you've also testified as to certain efforts -- or effects of conservation on the load growth in the areas involved, have you not?

A Montana's area, yes, sir.

Q And would you agree that conservation efforts apply equally well to new installations and new uses of electricity as well as to existing uses?

A I would see no reason why they wouldn't, unless they started out as conservative as could be.

Q Isn't it true that it's possible to strive for more efficient and economic use of electricity in many uses that may come on the system?

A This will be ever true, I'm sure.

Q So, this is a factor that could be taken into consideration in future growth of electrical use, could it not?

A Yes, sir.

Q You've also testified that economic factors play a significant role in -- or can play a significant role in determining future load growth, can it not?

A Yes, sir.

Q Would you agree that if economic factors resulted in a downturn, and at the same time the price of electricity rose significantly, that this could have a drastic influence on load growth in the area?

A Well, the degree of being drastic depends on the degree of downturn and the degree of increase, but it certainly could have an effect.

Q And likewise, you do agree that the effect of higher prices of electricity certainly play an influence on future use of electricity?

A Yes, sir.

Q But in terms of serving future loads that come on line, you make no requirements or prerequisites as to those facilities achieving improved efficiency or economy in electrical use, is that correct?

A Only in their bill, we have demand charges, and if they improve their efficiency, keep down their peaks, and increase the average use compared to the peak, their bill will be lowered.

Q This is after they come on service, is that correct?

A I don't know how we can be -- have any effect on them before they hook up to our system.

Q That's all I'm asking you. This is after they would come on service?

A Yes, sir, but we do, and have for a long period of time, provided service to those prospective customers to how to best use the energy in their industrial operation.

Q Now, you've testified previously, also, to potential customers for significant or substantial amounts of electricity in the future which are not firm. Have you likewise studied projected new cancellations of existing uses of electricity?

A Very thoroughly, sir, that's the reason we go to our existing customers, to find out what their plans are, or if we hear of a possible -- for instance, when the Milwaukee Railroad was going to de-electrify, this is one of the things that we were very much interested in, and we had been. Sometimes we get very short notice, though.

Q Would you agree that with a significant price increase that some industrial loads could become uneconomic and, therefore, cause to curtail themselves?

A This is a possibility. How real it is, I'm in no position to assess at this moment.

Q Have you taken this into consideration in your load growth study, specifically?

A By looking at the -- what appears the price of electricity might be compared to alternative sources of energy, and particularly in your industrial area, if they're going to operate they're going to have to have energy of one form or another if they're going to operate. If our energy is higher and costs them more money, they would turn to other sources, I would think, if it were possible.

Q You mentioned in your direct testimony, I believe, a plant at Eugene, Oregon, that came to a halt because of a five year moratorium there?

A That was a nuclear plant, yes, sir.

Q Do you recall what the megawattage was of that particular plant?

A It was around 1100 megawatts, something in that area.

Q Was it your testimony that this would have -- was of significant size to have supplied the need that is sought to be supplied by Colstrip 3 and 4?

A It would have supplied the major portion of it, yes, sir.

Q With respect to reserves in the manner and method in which you compute the amount of reserves to be figured into your future load growth forecast, I believe, as I understand your testimony, it's projected to be a total of 20 percent eventually, is that correct?

A This was in our projections as to the possibility of being 20. We stopped at 20 because that appeared to be the upper limit. As I also testified, we are currently negotiating, and have been for many months, and it may wind up something less than that when we're through, but I don't know what it's going to wind up at this point in time.

Q So, it's true, is it not, that you're not sure exactly what the future reserve requirements will be?

A No, sir.

Q So that in arriving at this figure, as you say, by negotiation, it's true, is it not, that this is an arbitrary figure based on your best estimate?

A Not arbitrary, sir, it was the -- for planning in the Northwest, it was agreed in the Pacific Northwest Utilities Conference Committee that there would be a 20 percent reserve to cover forced outage reserve, as well as errors in missing the load growth, that it would exceed what you had estimated, sir; you would be potentially short of resources. I believe that period of time was like a six months growth in the Northwest. Now, as to the allocation of that 20 percent, is what's under negotiation as to who will carry what and how much for the forced outage and the load growth reserve. So, for planning for the total area it was agreed that we'd take the present reserve which, I believe, is in the vicinity of 12 percent, and add 1 percent a year until it reached that 20 percent. But now the allocation of that is what is being negotiated; who's going to carry how much. But there will be planned 20 percent reserve in the Pacific Northwest, or in the Northwest, I should say, because we are in that group.

Q In Exhibits #3 and #4, do you have those in front of you?

A I'll have them here in a moment. I have them.

Q The reference here to reserves in both Exhibits 3 and 4, which cover the loads and resources for the participants, is that reference solely to reserves or does that include maintenance?

A No, sir, it's reserves. The maintenance, if you will note, isn't on that particular sheet, but no, sir, that's just the reserves.

Q Are you familiar with the Westinghouse environmental study that was prepared in connection with this proceeding?

A I'm aware of this study, and as to being fully familiar with all the details, no, sir.

Q Are you familiar with the load growth projections that were used in that particular study?

A Yes, sir, as was discussed with Mr. Shenker the other day.

Q That study was prepared in 1973, is that correct?

A Yes, sir, I think it was based on the latest estimate, as they say on the footnote in there, footnote 5, I believe. It was prepared from, I think, it's an August date in 1973 of loads and resources for the Montana Power Company.

Q Do you have a copy of that environmental study with you?

A I have a reduced copy, and I think it's page 1-3 that you're talking about, is it not?

Q That's correct. I'd like to refer to that as well as to the West Group Forecast for 1975.

A Well, they won't compare.

Q Pardon me.

A They won't compare, as we've gone through before many times, because we're constantly updating our loads, sir.

Q I understand that.

A All right.

Q Would you agree with me that the -- for the year 1977 or 1979-1980, for the resources of the West Group area for projected electrical requirements, that's Table 1.3-1 --

A 1.3-1?

Q Yes.

A That must be on 1.2. Yes, sir, I have it in front of me.

Q And the similar West Group Forecast contained in the February, 1975, volume?

MR. BELLINGHAM: What was that?

MR. WARNER: The West Group Forecast for 1975.

A To see that I'm looking at the same table as you are, it's just beyond the graphs, the bar graphs?

Q That's correct.

A Where it says sheet 1 of 2?

Q Yes.

A West Group Forecast estimated loads and resources, July '75 to June, 1986?

Q Yes.

A Okay.

Q What is the peak load requirements for the study contained in the environmental study for the electrical requirements for the West Group area for 1979-1980?

A For '79-80, it says total area requirements 31020 megawatts.

Q And in the 1975 West Group Forecast, what is the reading for the same year for the peak load total area requirement?

A 28,139 megawatts peak, that is.

Q And would you agree that's a reduction in 3881 megawatts?

A No, I don't think it's 3881; I think it's more like 2881, is it not?

Q You're correct; that's a mistake; 2881 is correct?

A I believe that's right; I didn't put it on paper, but we can check and make sure that adds up, if you so desire.

Q And again looking at the year 1981-1982, what is the peak load requirement in the study contained in the Westinghouse environmental study?

A 1981-82 is 34,069 megawatts.

Q What is the similar figure in the 1975 West Group Forecast?

A 30,950.

Q And subtracting those figures, would you agree that that's somewhere in the neighborhood of 3119 megawatts adjusted downward?

A Yes, we're looking at '81-82, aren't we?

Q That's correct.

A Yes, sir, you're right.

Q Again, going to the final year of that Forecast, 1984-1985, what is the total area requirement for peak?

A 39,886.

Q And the similar figure in the 1975 study is?

A 37,154.

Q Making a difference of how many megawatts?

A What difference? Oh, the last number you said. It was about 27 hundred and something.

Q Excuse me, I think I've misunderstood you. What was the figure you've used for the 1984-85, under the 1975 study?

A 37,154, oh, wait a moment.

Q I'm asking for '84-85.

A 35,483, excuse me, I gave you the wrong column.

Q And would you agree that's a difference of 4,405 megawatts adjusted downward?

A Yes, sir. Might we look at the same comparison on the energy basis, because these plants were built for energy requirement, not peak?

Q If you would just confine yourself to the questions that I do ask you --

A Yes, sir.

Q Now, similarly, in comparison to the studies contained in the Westinghouse environmental study and your current Montana

Power Company system load forecast, there is an adjustment downward, would you agree to that?

A Yes, sir, and prior to -- from that to here I think there's been two adjustments, one up and one down.

Q However, it's true, is it not, that the adjustment downward in your load forecast for the Montana Power Company system is somewhat less than for the Northwest region, is that correct?

A In the peak area, but I'm not so sure it's true in the energy area.

Q And it's true, is it not, that the current studies of the Montana Power Company system load growths were not considered and were not available, as a matter of fact, during the study period with which the rest of the environmental factors were studied for this particular facility?

A They were not, because they were -- we're constantly adjusting them as we learn new facts.

Q I'd like to refer to Exhibit 12.

A I have it in front of me.

Q This exhibit was prepared April 1, 1975, is that correct?

A That's the date on this one, yes, sir.

Q This, likewise, was not considered by the Department of Natural Resources during their 600-day study period, is that correct?

A It certainly was, sir, a similar study that they did themselves.

Q Now with reference to the costs for the transmission lines and the shipment of electricity by transmission line alternative, as contained on page 4 of Exhibit 12, and I'm referring particularly to the first paragraph, the 500 kv system --

A I have it.

Q And the first item there, it says cost per mile, 1979-1980, completion of 745 miles at 199,216,000 --

A That's $199,216 per mile, sir.

Q Excuse me. Does that distance of 745 miles include the distance of 115 miles from Colstrip to Broadview?

A It includes one leg, because a double circuit 230 kv is built now that is capable of being the second 500 if 3 and 4 are built.

Q Is it your testimony that the total distance between Colstrip and Hot Springs is a total of 745 miles?

A No, sir, it's 430 miles.

Q And that the total doubled is 745 miles?

A No, sir, there's one leg of 115 miles that's under construction now that will make it a total double line for 430 miles. That's the second item in that tabulation. Those two will be the total 500 kv system.

Q And the item of conversion of 230 kv double circuit line, is that for the 115 mile leg, is that correct?

A Yes, sir, that's what it will cost to convert it to a single 500 kv line.

Q And for the Colstrip to Broadview 230 kv double line which precedes, as I understand it, the 500 kv, is that correct?

A It's under construction now, sir, the second item on that tabulation.

Q You have it figured in as an amount of 19,436,000, is that correct?

A Yes, sir.

Q It's true, is it not, that those figures are based on original estimates based on wood towers rather than steel structures?

A No, sir.

Q That price includes steel structures, is that correct?

A Yes, sir.

Q Now, in the second paragraph you refer to transmission required if the 500 kv is not built, and, as I understand it, these items are included in the rail alternative in the event the 500 kv's are not built to transmit the electricity, is that correct?

A Yes, sir.

Q Aren't the additions of these lines additions that would eventually be made in the Montana Power Company system?

A Not if the 500 kv was built.

Q But if the 500 kv was not built, they would eventually be made, is that correct?

A Yes, they would have to be made, but they would be an added cost due to the fact that the 500 kv lines were not built.

Q Well, is it your testimony that these lines are specifically required as a direct result of not having two 500 kv's built?

A Yes, sir.

Q Isn't it true that you would need these in your system in routine additions?

A Not if the 500 kv system was built.

Q Going to Exhibit #13, which is the economic impact within the state --

A I have it in front of me.

Q In comparing the economic impact of Colstrip versus electrical transmission, are you comparing this with the Burlington Northern's Railway System that presently is in existence?

A Yes, sir, but there's a maintenance, an operation figure; if it's attributed to the operation, that includes upgrading of their railroad network as they have been through the years. It's based on what has been experienced in upgrading in their system.

Q But it includes the usage of tracks and rail routes that are presently in existence, does it not?

A Yes, sir.

Q And the transmission lines and transmission right-of-ways that would be included in the other alternative are not in existence, is that correct?

A They are not.

Q Where in the Exhibit #13 does it take into account the effect on interference with agricultural operations in the acquisition of the right-of-way required for the 500 kv transmission system across the state of Montana?

A In the cost of purchasing the right-of-way, sir, for that system.

Q It's strictly confined to the cost of purchasing the right-of-way, isn't that correct?

A And that reflects what the landowners consider to be their problem because of the line, their cost.

Q Do you think there would be any economic impact detrimental over and above what is paid for the cost of acquiring that right-of-way over a term of 42 years?

A There might be; however, there's --

Q Are you aware of the width of the proposed right-of-way required for the 500 kv?

A Yes, sir, but the acreage actually taken out of circulation has no relation to the width, sir.

Q I asked you if you were aware of the width?

A I said yes, sir.

Q How wide is it?

A Three hundred feet wide.

Q That's a total of some 400 and some miles across the state of Montana, is that correct?

A Four hundred and thirty is our estimate.

Q Is there anyplace in Exhibit 13 where the effect on the rate payor for the state of Montana is figured in the economic impact of these two alternatives?

A No, sir, but the impact would be greater from the rail than it would be from the installation.

Q Do you know if the plans have been finalized as to who is to own the 500 kv line for this proposed facility?

A It has not been finalized, to date has been assumed, for purposes of study and cost, that on roughly the same percentage as the ownership of the plants.

Q Is there any reason why that hasn't been finalized?

A No particular reason other than it might be that the total ownership might, for instance, in the case of the Montana Company, be 30 percent of the total project, but maybe it's a greater percent of one section than of the other because of our needs in one section, and that's why it has not been resolved, as yet.

Q Is there a likelihood that the Montana Power Company could own a greater percentage than the percentage they plan to have in the generating plants?

A It might be, to some degree; I have no idea whether it would be or not. I have some doubts in this area, but it's possible, instead of 30 maybe 31 and 32 percent, or maybe 27-28 percent. These will be resolved ultimately.

Q Is there a likelihood that it could vary more than that?

A I doubt that it'd be very much more than that.

Q Would it be fair to say that the studies that have been referred to in Exhibits 12 and 13 assume the proposition that Western Energy coal would be used in the burning of any prospective Colstrip 3 and 4 plants?

A Yes. That's a --

Q That's an assumption that's made, is it not?

A Yes, sir, but we do not agree that necessarily the Western Energy coal would be the coal that would move, but that's what has been used in the study.

Q There is nothing that says that Western Energy coal does have to be burned in Colstrip plants 3 and 4, does it?

A No.

Q And in light of previous testimony with references to the marketing of coal by Western Energy, it's quite likely this coal would be marketed elsewhere if it were not marketed for Colstrip 3 and 4, is that not correct?

A That doesn't necessarily follow, sir.

Q Well, Western Energy does sell their coal in other places, is that not correct?

A They have to date, yes, sir.

Q Would you agree the public need must be determined for the state of Montana for these particular facilities?

A As well as the needs of the Northwest is our stand.

Q You would likewise agree that it must be determined for the state of Montana as well?

A Yes, sir.

Q You've referred to numerous coordination, cooperation, and planning groups and power pools, and I'd like to refer to DNR Exhibit 10, I believe, which enumerates some of those power pools. Do you have that in front of you?

A My copy was taken as an exhibit, and I don't have one now.

(HEARINGS EXAMINER GIVES COPY TO WITNESS.)

Q This particular exhibit refers to the power pools located in the Western Systems Coordinating Council?

A Yes, sir.

Q And there are four of them in number, correct?

A As enumerated on this, there are.

Q And, in addition, you belong to numerous other planning and coordinating groups, is that correct?

A Yes, sir.

Q How would you characterize the principal objective of these planning groups?

A As I've said several times before, to minimize costs to the customer and improve reliability of the systems that are parties thereto.

Q And is it not a function of these planning groups to plan regionally for the power needs of the area?

A Only some of them, sir.

Q This would refer to the particular planning groups?

A Some are planning; some are coordination or exchange of information; some are operating pools. The operation is what the resources are in.

Q Could you enumerate for me which ones are the planning groups that Montana Power Company participates in?

A As enumerated the other day, Pacific Northwest Utility Conference Committee is one that is a planning group as such. The Inter-Company Pool of seven investor-owned companies is a planning group. Those are the ones that I am associated with that I have knowledge of. The Western Systems Coordinating Council is not a planning group. It's a coordination of plans to assess the effect on the area of new installations and to strive for adequate reliability or to -- with the exchange of this information. The Rocky Mountain Power Pool is an operating pool. The Northwest Power Pool is an operating pool.

Q With respect to the planning groups, would it be fair to say that the principal objective there is to regionally plan for power needs in the area?

A It's to plan for the needs in their respective areas, yes, sir.

Q And when you're talking about the generation plant in the area of 700 megawatts, are you not considering other than a local area for power requirements?

A Yes. The project as proposed is for five utilities, this particular project, yes, sir.

Q So your objective is to plan regionally and, particularly in this case, for the five utilities, is it not?

A The five utilities' regions, yes, sir.

Q It's true, is it not, that in the environmental study that has been prepared that, in connection with the Applicants' application for these facilities, no alternative locations were considered outside the state of Montana?

A This is right.

Q It's true, is it not, then that regionalism really disappears in the licensing function where the alternatives are narrowed down to one site location?

A It is not.

Q But your site locations have been limited to within the state of Montana, is that correct?

A They were, because there were no other sites that appeared available in the time frame.

MR. WARNER: I have no further questions. I'd like to reserve cross-examination on any additional matters that are still a subject of discovery.

HEARINGS EXAMINER: Yes, that will be granted. Mr. Brown, do you have any cross-examination?

MR. BROWN: Yes, I do.

Continuation of Cross-examination of Mr. Hofacker by Board of Health and Department of Health and Environmental Sciences By Mr. Brown

Q Mr. Hofacker, I believe you've testified previously that you have approximately 150 employees under your jurisdiction as vice president and chief engineer for the Montana Power Company, is that correct?

A I think it's probably closer to 135, but this number's good enough.

Q And these employees under your jurisdiction are responsible for development of the plans that the Montana Power Company undertakes in proposing future additions to their power supply locations in the state, is that right?

A Yes, many sections participate in this.

Q You've also testified that one of the major concerns of the Montana Power Company is the potential impact on the environment of any planning activities that you undertake, is that not correct?

A Yes, sir.

Q How many employees did you state are employed within the Environmental Protection Department of the Montana Power Company?

A There are two that are in an administrative type position, but the whole resources of the Montana Power Company are utilized by them.

Q I also believe that you testified previously that it is the function of the Environmental Protection Department to work with consultants on the various projects being undertaken by the Montana Power Company and to also work with state and federal environmental officials?

A Yes, sir.

Q Although Carl Anderson will not be called as a witness in this proceeding, he has been deposed, and, if possible, I would like to read from page seven of his deposition a statement in which he describes his duties as head of the Environmental Protection Department within the Montana Power Company and ask if you would agree that it is an adequate assessment of his duties. This begins about the middle of page seven of Mr. Anderson's deposition, and his response comes as the result of a question asked by Mr. Sheridan as to what his assignments are and who gave him those specific assignments. Answer by Mr. Anderson: At the time Joe McElwain was the executive vice president of the company. He was the one who gave me the assignment to become familiar with environmental considerations and concerns affecting the Montana Power Company operations. To keep our operations in line with real environmental effects or concerns, I guess that is the general description. That's the end of his answer. Would you agree with Mr. Anderson's description of just what his duties are?

A I agree with that statement.

Q He states that one of his duties is to keep the operations of the company in line with real environmental effects and concerns. Based on that statement, is it your impression that Mr. Anderson would define what are real environmental concerns, or would that direction come from above, from Mr. McElwain or yourself or the other executives of the Montana Power Company?

A I would think it would be a joint assessment, sir, of all the people that you've mentioned.

Q Mr. Anderson has been dubbed Mr. Clean, I guess, within the Montana Power Company, and has also been described as the environmental advocate within the company. But, yet, you've testified that you cannot recollect any specific instances in which Mr. Anderson played the role of advocate as far as environmental issues in the state of Montana are concerned, is that not correct?

A I don't think I can answer that with a yes or no, sir.

Q Well, based on your dealings with Mr. Anderson, have you ever been involved in a situation where Mr. Anderson has come to you and has said: Based on my meetings with state and federal officials or with consultants I believe that the proper course for us to take, as far as the environment is concerned, is such and such a course of action?

A I have heard him make such statements, yes, sir.

Q Have you ever heard Mr. Anderson report either directly to you, verbally or in writing, concerning the policy of the state of Montana with respect to environmental concerns?

A I believe I've heard him participate in discussions of those policies.

Q Has Mr. Anderson ever described for you the contents of the State Implementation Plan as it pertains to the maintenance of air quality in the state of Montana?

A I believe he has written memos in this area, sir.

Q Have you produced copies of those memos?

A I don't know whether we have or not.

MR. BROWN: I would like to request at this time that copies of any memos written by Mr. Anderson, dealing with the State Implementation Plan of the state of Montana, be furnished the counsel for the Department and Board of Health and Environmental Sciences.

HEARINGS EXAMINER: Request will be noted; they will try to accommodate you in that regard.

Q Do you recall offhand what Mr. Anderson's recommendations were to the Montana Power Company as they pertained to the State Implementation Plan?

A No, sir, I do not.

Q You do not recall any specific situations concerning either construction of 1 and 2 or 3 and 4 in which Mr. Anderson's comments concerning the State Implementation Plan might have been discussed with you?

A I believe, as I mentioned to -- previously today, that I recall instances where he suggested certain studies, but I don't remember the specific studies, but this has occurred.

Q Has Mr. Anderson ever recommended a course of action for the company which deviated from the ultimate decision reached by the executives in power within the Montana Power Company?

A I'm not aware of it. I don't know that he has.

Q You cannot recall, then, any specific instance in which Mr. Anderson took a specific strong stand concerning a major environmental issue in the state which directly affected the Montana Power Company?

A I recall none, because we're striving to meet the requirements of the state.

Q Would you agree then that Mr. Anderson's report to you concerning environmental matters has always been that the Montana Power Company need only comply with the standards, whether they be water of air quality standards?

A He has not said that to me, as such.

Q Has he ever discussed the need to undertake plans which would result in a minimum adverse effect on the environment?

A He's been involved in those plans having to do with Colstrip 3 and 4, transmission lines and that.

Q But did he distinguish between complying with the standards and a course of action which might result in the Montana Power Company doing more than simply complying with the standards?

A I don't recall any specific instance in this area.

Q And certainly no such discussion, then, took place with respect to 3 and 4 that you recall?

A None that I recall, but that doesn't exclude the possibility that some may have.

MR. BROWN: I have no further questions at this time, Mr. Davis.

HEARINGS EXAMINER: I don't have the admission of DNR Exhibit 10, report of the Western Systems Coordinating Council.

MR. SHENKER: That's the exhibit I thought I had offered, Mr. Davis, but if I have not done so, I do so now.

HEARINGS EXAMINER: To clarify the record, we will show it as now being offered. Do you have a copy of it.

MR. BELLINGHAM: We do, and I have no objection.

HEARINGS EXAMINER: We'll recess for 10 minutes and come back with redirect.

(BRIEF RECESS AT 3:30 P.M.)

MR. SHENKER: Maybe I should also put on the record about Exhibit 9. It is my understanding that Mr.

Hofacker will will find me a copy of that memorandum from Mr. Stewart with the three pages attached. That will then become an exhibit which has been offered and received without objection, as I understand it.

HEARINGS EXAMINER: You'll do that, Mr. Hofacker, I presume when you get back to Butte?

WITNESS: Yes, I've written some notes.

HEARINGS EXAMINER: Yes, I recall that last night.

MR. SHENKER: The other matter, Mr. Davis, in connection with the witness, W. L. Faith, whom I understood was to be the first witness called by the Applicants in the Health hearing starting tomorrow, he has provided us with a list of publications which he said served as verification of a plume dispersion model that he used. There were five of them. We've asked for them in the past but haven't received them. They are kind of long names and authors, but they were all written out by Mr. Faith, and, I think, probably the easiest thing to do is to hand a copy of the publications to the Applicants and a copy made available to the hearings examiner. There are five publications in all which run in dates from 1966 through 1975. A number of these are not publications that are available in any way other than Mr. Faith giving us a copy. So we would like to have those before he testifies.

HEARINGS EXAMINER: Do you have a note on that, Mr. Ross?

MR. ROSS: Yes, I do.

HEARINGS EXAMINER: The record will show you're now handing a copy of the list of the things you need in that regard. Do you have anything else, sir, at this time.

MR. SHENKER: No, thank you, sir.

HEARINGS EXAMINER: Mr. Ross?

MR. ROSS: If I might, while we're on the matter of exhibits, I also have further exhibits to distribute to all parties, and those exhibit numbers are Exhibit 66B, 66C, 68, 69, and 103A, and I will now give those exhibits to all parties.

MR. SHENKER: I've kind of lost track. Have you now got copies of all the exhibits that are on the list that Jack Peterson prepared, or are there still some more to come?

MR. ROSS: I'll have to check with Jack.

HEARINGS EXAMINER: Sorry about interrupting your redirect, Bill. There's one other thing, though, that it's presently now my intention and my understanding, and I think it's in the record, that tomorrow at ten we're going into the Board of Health hearing jointly and concurrently with the BNR hearing, at which time we will adjourn the BNR and continue on with the Board of Health hearing only.

MR. SHENKER: That's at 10 o'clock tomorrow morning?

HEARINGS EXAMINER: At 10 o'clock tomorrow morning. Now, also it is my understanding that it has been acceptable to all parties that we would send a copy of that transcript to all members of the Board of Natural

Resources which will subsequently be an exhibit. So I won't get into a discussion about them tomorrow, I would like to forge an opportunity to raise any questions or suggestions you might have in regard to that, but I think we're in accord on that. But I don't want to wait until we get into another Board of Natural Resources hearing to start having these people have the opportunity to read all this material that hopefully you'll be wanting them to digest as we go along the best we're able to afford it.

MR. SHENKER: Could we take that up at the beginning of the Health hearing tomorrow morning, because there's a technicality of the necessity of incorporating by reference the whole of the hearing before the Board of Health for the purposes of the Board of Natural Resources, and if you're supplying a transcript to the Board of Natural Resources from a hearing record that hasn't yet been incorporated by reference, then we have a technical problem; we should probably address that.

HEARINGS EXAMINER: Well, I'm wondering if we can incorporate it by reference and call it an exhibit before we get into the Health hearing, if it would solve any of the problems that have presented themselves about taking up Board of Resource matters during the Health hearing. I can't see that it really will, but my only thought was, and if you think about it a little bit and give me the benefit of your wisdom, that I would prefer not to wait until the conclusion of the Board of Health hearing and

and then have another Board of Natural Resources hearing before that's entered as an exhibit.

MR. SHENKER: I agree with that thinking, and I will give it some thought over the evening tonight, but it's just a technicality, but we do have to account for it in the incorporation by reference. My present thinking is that that record would not be an exhibit. It would simply be an incorporated record.

HEARINGS EXAMINER: That would be fine, too. So, we wouldn't get back into the Natural Resource matter during the Health matters. In any event there should be any down-the-road delays in the Resource hearing after the Health hearing, we would at least have gone that far, and they could study that much.

MR. SHENKER: Right.

HEARINGS EXAMINER: Very well, Mr. Bellingham, you can proceed with your redirect examination.

Continuation of examination of Mr. Hofacker

Redirect, by Applicants

By Mr. Bellingham

Q Mr. Hofacker, there previously has been considerable reference to the possibility of hydro development, not only in the state of Montana, but in the Pacific Northwest as well, do you recall your testimony regarding this subject?

A Yes, sir.

Q I wonder if you would state once again, if this is indeed the case, why Montana Power has not undertaken additional hydro development in the state of Montana to add to its resources within recent years?

A Because there were none available to us at an economic cost. We do have two pending. The application is before the federal authorities now for hydro.

Q Outside of those, there have been no others?

A No, sir.

Q For the reasons you stated?

A Yes, sir.

Q Now, there's also been references during your testimony of the Pacific Northwest as to possible hydro developments in the future?

A Yes, sir.

Q Would you compare the particular hydro developments, in so far as peak and energy is concerned?

A They're something well over 8000 megawatts of peaking development possible, but I believe the energy, as tabulated, is in the area of 185 to 187 megawatts less than the output of the Colstrip unit #1.

Q There's been previous references to load forecasting. Let us assume that during the year of 1960 you made a load forecast for a ten year period which would include the year of, say, 1970-1971, would it not?

A Yes, sir.

Q Now, then, you would assign certain figures to the Montana Power requirements for that particular year in that particular forecast, would you not?

A Yes, sir.

Q Now, then, assume that the years go by and, in 1965, you made another load forecast and, in that particular forecast, another ten year forecast, the year of 1970 would be included, '70-71?

A It would.

Q Are the figures apt to be the same as between those two forecast, one dated 1960 and one dated 1965?

A No, sir, because of -- the system is changing; it's not fixed in place.

Q I think you indicated that you make load forecasts how often?

A Sometimes every few months, depending upon changes, and sometimes annually of biannually, depending upon the needs. If trends are apparent that there needs to be a change, we make it.

Q Would you say that the question of need is one that is a moving one?

A It certainly is.

Q Over the years?

A Yes, sir.

Q Now, there's been references here to reserves. I think you've previously explained that -- basically what they are. But why do you incorporate reserves into your load forecasting?

A Because they're necessary if we're going to maintain continuity of service, much the same, as I've said before, of having a spare tire in your car. There could be a time when you need it; you hope you never have to, but you may need it.

Q And when might you need it? What would throw that into operation?

A A major breakdown, a strike that occurs that might affect one part of your system, things like that, but normally it's for breakdown, called forced outage reserves.

Q Now, I'd like to call your attention to Exhibit 6, if you will please. Do you have that?

A I'll get it.

HEARINGS EXAMINER: Who's exhibit? Yours, Bill?

MR. BELLINGHAM: Applicants' Exhibit 6. I wish we'd numbered the others A, B, C; it would help.

A I have it. I have it in front of me.

Q Now, then, that exhibit shows Montana Power loads and resources for energy, excluding units 3 and 4, am I correct in that?

A Yes, sir.

Q You have deficits there for what years?

A The surplus or deficits over firm load reserves maintenance with critical water, they occur in '75-76, '79-80, and continuing on in increasing amounts thereafter.

A Now, then, there have been mentioned the two items appearing at the extreme bottom of that particular exhibit. One is labeled Median Water Adder, and the other is labeled Bird?

A Yes, sir.

Q Now, what is the reason for placing them in the position that they appear in?

A Because they are not part of our firm resources as tabulated.

Q Now, as far as Median Water Adder is concerned, why not?

A Because we may not get Median Water; we may very well get the Historical Critical Water; that has happened before, and we have contracts for firm load that we wish to serve with the forest water conditions that we know of record.

Q But you do not dare take a chance?

A We feel that we should not.

Q Is this typical of utility companies?

A It is, sir, with those that have hydro generation.

Q Now, as far as the Bird designation at the bottom is concerned, what is the reason for that?

A We consider that a peak reserve much as you would put on gas turbines, and we would not wish to run it more than we would have to because of, not only the possibility of lack of availability of fuel, but the cost of the fuel.

Q Now, then, in so far as this particular exhibit is concerned, what would you consider to be critical years for the Montana Power Company down the road?

A Well, the first one would certainly be '79-80, because we have a deficiency there that we need to take care of that, to our best knowledge, cannot be supplied by other units. The time frame is such that we couldn't bring on alternatives, and with the deficiency in the Northwest, it's very doubtful anything could be purchased there to take care of it. The same is true for '80-81, '81-82, and on in lessor degrees, for the reason if you get far enough out you have a possibility of an alternative.

Q Well, why do you have a possibility of an alternative?

A Because you have enough time to get an alternative on as you get farther out.

Q And the question of time involves lead time as well as other factors, you've previously testified?

A Yes, sir.

Q The coming on of other facilities elsewhere, and so forth, is that right?

A Yes, sir.

Q Now, there has been testimony brought out from you by Mr. Shenker relative to gas rates, present gas rates, as well as the fact that there was to be an increase, do you recall that?

A I do.

Q Your testimony as to present gas rates, in so far as the Montana Power Company is concerned and its Canadian imports, is what?

A A dollar per mcf or a thousand cubic feet.

Q And increases have been indicated by the Canadian government?

MR. SHENKER: Now, just a moment. That's the same matter he went into in direct examination. Obviously, it's improper to simply go over the same field on redirect, but it's even more improper when the same question was objected to, and the question was sustained -- I should say the objection was sustained as to that question on direct, and I object to it once again.

MR. BELLINGHAM: My reason, sir, is the fact that Mr. Shenker opened the door wide as far as I observed when he asked him when did he expect the next increase or something to that effect. The witness was allowed to answer that the anticipated increase was going to be a certain dollar and cents by a certain time.

MR. SHENKER: There was no such question asked; therefore there was no such answer. My question was whether it was not true as stated in Exhibit 12 of the Department of Natural Resources that the cost for the natural gas was 64 cents per thousand cubic foot in November of 1974 and is now a dollar per thousand cubic foot at the Canadian border. The answer to that was yes. Be that as it may, while, of course, this redirect would therefore be outside the scope of the cross, we're not under those strict rules as I understand it. But the question still has the same vice that it had when the objection to it was sustained on the direct examination. The witness is being asked to relate the views of the Canadian government, and Mr. Bellingham told us that since that was second hand heresay, and Mr. Coldiron would represent the first hand heresay of that evidence, Mr. Coldiron was a new witness added to their list who would come in so to testify, and we, of course, will take his deposition before he comes to testify on that subject. It is just as improper now for the same witness to repeat second hand heresay, and that's why we still object to it.

MR. BELLINGHAM: Whether or not discussion related to a future increase or a past increase, I think it's immaterial, because I think, through the cross-examination, I think the subject has been brought up, and it's been gone into, and that, accordingly, the door is open, and this witness is under a situation where he is able to testify to it as a result, where, as before, he was not.

MR. SHENKER: The point of the matter is to the reliability of the evidence, the competency of the testimony, not the relevancy. We'd like to know what the Canadian government is going to do next year, and the best way to find out is to have them tell us. They've suggested the next best is to have Mr. Coldiron tell us. That would certainly be preferable to having Mr. Hofacker tell us what the Canadian government told Mr. Coldiron.

HEARINGS EXAMINER: Could you give me the question again, please?

MR. BELLINGHAM: Basically, I think the question was asked as to whether or not the Canadian government has placed an increase on further natural gas to be imported from Canada by the Montana Power Company.

HEARINGS EXAMINER: Objection sustained.

Q Now, you recall sometime during the last week you were asked certain questions concerning the West Group Forecast, which is Applicants' Exhibit 118, by Mr. Shenker, were you not?

A Yes, sir.

Q Do you recall at page 2 of the West Group Forecast labeled Discussion of Detailed Report, you were requested to read a portion of the second paragraph appearing under the hearing Load Estimates, do you recall that?

A Page 2 of that, yes, sir, is it the paragraph: The utilities are keenly aware?

Q Yes.

A Yes, sir.

Q Do you recall reading a portion of that?

A I read approximately half way through that, yes, sir.

Q And, as I recall, you were not allowed to continue?

A I was not allowed to continue starting from the point: conversely.

Q All right, would you then, so that we can get it in the proper frame of reference, read the entire paragraph as it appears?

A "The utilities are keenly aware of the need for accurate load forecasts in the planning and scheduling of resources to meet the projected power requirements. The costs and difficulties of acquiring capital are at historic peaks, and the utility industry is very capital intensive. Therefore, scheduling of resources in advance of need would result in serious and adverse financial impact on utilities and their customers."

Q Now that ends the portion that you previously read?

A Yes, sir.

Q You're now beginning the portion that you have not previously read, is that right?

A Yes, sir.

Q All right, continue.

A "Conversely, there would be severe adverse economic effects on the people and the commerce of this area and a difficult allocation or rationing problem for state governments if there were insufficient resources to meet the power needs. This is why load resource analyses are reviewed at least annually. If experience shows that more than enough resources have been scheduled, the schedules can be corrected. But if too few resources have been scheduled, there may be no way to avoid the public injury from the resulting shortage."

Q Can you tell us what kind of public injury that might result?

A As stated there, the lack of jobs for industry because of inadequate energy for their operation. There could be inconvenience to people because of rationing that might have to be put into effect, because the resources are incapable of carrying, on a continual basis, the loads.

Q Now, would you turn to page 11 of the same exhibit, Applicants' Exhibit 118, the West Group Forecast, page 11 being under the major title of Discussion of Detailed Report. What do you find on page 11?

A A list of parties whose loads and resources have been itemized in this analysis.

Q That explanation appears at the bottom of page 10, does it not?

A It does, sir.

Q So that you have some -- how many companies who are specifically named at page 11 as owning generating facilities whose loads and resources have been itemized?

A There are 16 in that list, sir.

Q Now, then, will you read the sentence immediately following the 16 so named?

A "Other utilities which are not in the above listing, but which serve load in the West Group area, have been included in the load estimatesof the utilities which supply their requirements."

Q And do you know approximately how many possible other utilities may be involved?

A Well, I believe the Bonneville Power Administration supplies power to, in excess of 100, other entities.

Q Now, yesterday or the day before or perhaps the day before that, you were asked certain questions regarding a summary that appears in Section 3 of the West Group Forecast, Applicants' Exhibit 118, were you not?

A I believe so, yes, sir.

Q Will you turn to that particular section; that's Section 3 labeled Resources and Requirements Summary Tabulations?

A I have it.

Q That particular summary of resources and requirements which constitutes the first page following the heading refers to what?

A It's a tabulation of the resources and requirements for the area, the West Group area, for the periods 1975-76 through 1985-86, and includes tabulation of specific thermal units coming on.

Q Now, does that include or exclude reserves?

A This does not include reserves; it's just a loads and resources.

Q Now, then, I would like to call your attention to the colored bar charts, at least colored as they appear in the original West Group Forecast, that appear immediately following the heading Definitions, the pages not appearing upon the particular sheet. Do you find the first bar chart?

A Yes, sir.

Q What does that constitute?

A It says Peak Loads and Resources, Adverse Hydro.

Q This is for the entire West Group?

A Yes, sir.

Q And the bar to the left which is blue upon the original Forecast represents what?

A The peak resources.

Q And the bar to the right which appears as red on the original Forecast represents what?

A The total peak load.

Q In what years do you have deficits as indicated upon that particular bar chart?

A 1981-82 as well as minor deficits in 1975-76 and 1976-77.

Q Now, turn one more page to the next bar chart which is labeled West Group Forecast Energy Loads and Resources, do you see that?

A I have it, sir.

Q What is the difference between this particular bar chart and that one immediately preceding?

A It's a similar bar chart, only this has to do with energy load and resources, where the previous one was for peak.

Q Do you find any years where there is a deficit in this particular bar chart labeled Energy Loads and Resources?

A Yes, sir, many of them.

Q What years?

A 1975-76 through 1983-84.

Q Now, do these two particular bar charts that you have referred to include reserves?

A Yes, sir.

Q And is there any section appearing in the West Group Forecast which forms a basis upon which these particular bar charts were taken?

A Yes, sir, I believe it's immediately following these bar charts, is it not?

Q Is it?

A The page, sheet one of two, and on there are tabulated -- wait a minute. No, sir, I have that -- Oh, yes, yes, it has reserves itemized.

Q Well, it's estimated loads and resources for the West Group, is it not?

A West Group? Yes, sir, July '75 to June 1986.

Q And that particular chart appears immediately following the second bar chart?

A Yes, sir, it's a tabulation of the components.

Q Now, does this particular compilation include reserves?

A It does.

Q Now, does it include any part of Colstrip 3 and 4 in its computation?

A Yes, sir.

Q Where do you find that?

A Down under note 1, 70 percent of units 3 and 4.

Q And why only 70 percent?

A Because that's the portion of the ownership by other than Montana.

Q At the time that this particular chart was made, the Montana Power Company was not a member of West Group Forecast?

A That is right.

Q Now, then, in what years do you have deficits as far as this particular tabulation is concerned as to the West Group, insofar as peak is concerned?

A 1975-76, 1976-77, and 1981-82.

Q What years do you have deficits insofar as the West Group Forecast is concerned, insofar as energy is concerned?

A 1975-76 through 1983-84.

Q Would those deficits for 1979-80, and thereafter, appear greater if Colstrip 3 and 4 was excluded from that particular tabulation?

A Yes, sir.

Q By what figure?

A It would be the contribution of 70 percent of the 1400 megawatt plant in the area of peak, and, of that plant and its proposed energy capabilities, 70 percent of that.

Q Now, would you please turn quickly to Exhibit #12, Applicants' Exhibit 12?

A I have it.

Q Now this one is the relative costs of Colstrip to Hot Springs alternatives, railroad coal shipment versus 500 kv transmission, is it not?

A Yes, sir.

Q You were asked the question the other day that if you were to assume that the costs of the 500 kv line, transmission line, of course, was increased by $22 million, and if you were to assume that the cost of transporting coal by rail was $42 million dollars less than in the computation, as set forth in Exhibit 12, what would be the results, do you recall that question?

A Yes, sir.

Q Do you believe that there is any valid ground for such an assumption or assumptions?

A We do not, or we would have included it in the study.

Q Turn next to Exhibit 13, if you will, please. This is another economic study, is it not?

A Yes, sir.

Q You were asked the question if, included in this particular exhibit, was the cost to the railroad involved of rolling stock, that is, engines and rail cars, do you recall that?

A I do, sir.

Q What was your answer?

A That it was not included as an item, but that we -- the earnings on the capital stock are included in the -- on the capital stock involved in the purchasing of that railroad equipment.

Q Turn to page 1, Section roman numeral one, arabic three; you have the legend there, do you not; it is assumed that a railroad will own the rolling stock, engine and cars?

A What page is that again?

Q Page 1.

A I have page 1.

Q Roman numeral one, arabic three?

A Yes, sir, I have it.

Q So, you exclude, in that particular section, any costs of purchasing rolling stock, engine and cars?

A We do exclude the purchase cost of them, yes, sir

Q Now, why do you do that?

A Because we included the return on the investment involved in the purchase of those.

Q Where would those cars and engines be built?

A Outside of Montana.

Q So, is there any reason to include their initial cost?

A No, sir.

Q And I think you indicated that you did include, in the study, what factor relative to -- ?

A The dividends paid in-state on the capital financing for the plants, lines, and rolling stock.

Q Why did you do that?

A Because that would be increased earnings to people, stockholders in Montana, that might well be spent in Montana.

Q Now, then, I think you were also asked as to whether or not the costs of upgrading the railroad lines was included, were you not?

A Yes, sir.

Q Is there any section or provision made in the exhibit, Applicants' number 13, relative to the maintenance?

A Yes, sir, and I'm looking for it here. Well, I have it numbered page 6; I don't know whether it appears on yours or not, but it's II, Subsection D.

Q Appears at page 6, yes.

A Yes, sir.

Q And in that, is there an explanation, backup matter, relative to the maintenance?

A Yes, sir, it alludes to the experience as to the costs of O and M, that's operation maintenance and materials, of maintaining the railroad and the upgrading that has been experienced by the railroad.

Q You were asked this morning regarding certain conservation matters that were performed out in the state of California under a commission, as I recall. Has there been any commission or legislative action in this state -- the state of Montana, relative to conservation steps that you know of?

A None to my knowledge.

Q You were also asked during the course of your cross-examination if you were familiar with a Federal Power Commission report of some kind regarding the growth rate annually of the United States, the difference between the years 1973 and '74, do you recall that?

A Yes, sir.

Q What figure was brought out at that time as far as overall United States growth rate is concerned between those two years?

A The growth in energy consumption, or serve, for the United States was -.3 percent, comparing 1974 to 1973.

Q Do you know from what study that particular figure was obtained?

A Well, it's a Federal Power Commission News Release.

Q Do they give these news releases out periodically during the year?

A Yes, sir.

Q Now, then, are you familiar with any statistics put out by the Federal Power Commission in any of its news releases regarding the Northwest area of the country?

A Yes, sir.

MR. SHENKER: May I ask that the Northwest area be defined so that -- we have a number of different references?

MR. BELLINGHAM: We are.

Q Do you know the date of any such news release?

A April, 1975.

Q Could that have been the previous month?

A March, yes, sir, it could have been.

Q Now, then, do you recall the particular release that you're referring to? Do you know whether it breaks the country down into various sections?

A It does.

Q Is one of those particular groups broken down called the Northwest Group?

A It is.

Q Do you recall what region?

A It's FPC Region 7.

Q Do you know what that particular region includes insofar as territory?

A The state of Utah, a portion of the northern part of the state of Nevada, a small portion of Wyoming in the southeast section, Yellowstone Park -- no, southwest corner of Wyoming, correct that, and in the northwest part of Wyoming, Yellowstone Park, the Montana Power Company service area in Montana which is some two-thirds or better of the western portion of the state, the entire state of Idaho, Washington, Oregon, and a portion of northern California.

Q Do you know whether that particular report had any statistics relative to the particular group you referred to, that is, the Northwest region number 7, insofar as growth or decline in loads between the years of '73 and '74?

A It does.

Q Do you recall what those changes or differences were?

MR. SHENKER: May I ask that these be described whether these are average annual or a particular month in peak?

MR. BELLINGHAM: He will. This is part of it.

A The average annual grew 6.8 percent.

Q Average annual what?

A Energy, 6.8 percent from 1973 to 1974; the December, 1974, was 6.1 percent over December, 1973, for peak.

Q You testified previously that the Montana Power Company had in the mill a request for a price increase of approximately 22 percent as far as electrical rates are concerned, am I correct in that?

A Yes, sir.

Q Who decides whether or not this rate increase will be awarded to the Montana Power Company?

A The Railroad and Public Service Commission.

Q Of the state of Montana?

A Of the state of Montana, yes, sir.

Q Do you recall of your own knowledge any similar type request where Montana Power had obtained the entire rate increase that it requested?

A I don't recall any, sir.

MR. BELLINGHAM: No further questions.

HEARINGS EXAMINER: Very well, Mr. Shenker, do you have any re-cross-examination?

MR. SHENKER: Yes, thank you, Mr. Davis.

Continuation of Examination of Mr. Hofacker, Re-cross-examination, By Department of Natural Resources and Conservation

By Mr. Shenker

Q Mr. Bellingham first inquired of you, Mr. Hofacker, with respect to additional hydro developments in the state of Montana, to which your answer once again is that your determination is that -- was that there was no economic hydro site available for development, is that right?

A That was my response, sir.

Q Is it your testimony, Mr. Hofacker, that you want us to believe, sir, that you have caused an investigation to be made of all six thousand of the potential megawatts for developable hydroelectric facilities in the state of Montana for which engineering feasibility studies have been done by the Federal Power Commission?

A We have not so studied, but engineering feasibility has not been done for all of those studies, as I read the report.

Q The Federal Power Commission says that it has.

A They use little different terms, as I read the report after you mentioned it the other day.

Q When I asked Mr. O'Connor about it?

A I didn't ask Mr. O'Connor --

Q When I asked Mr. O'Connor?

A Yes, sir.

Q How do you read the report?

A I read that complete engineering studies have not necessarily been made on many of them. As I recall, it further had a classification in engineering analysis that had been made.

Q Do they call them engineering feasibility studies? They distinguish those from completed engineering studies, don't they?

A Yes, sir.

Q And, similarly, you don't want us to believe, Mr. Hofacker, that a study has been done by any of the five Applicants, or all of them collectively, on the additional developable ten thousand megawatts of hydro facilities in the state of Oregon or the additional developable twenty thousand megawatts of hydro facilities in the state of Washington for which similar engineering feasibility studies have been done by the Federal Power Commission?

A I would not.

Q Now, Mr. Bellingham was asking you, Mr. Hofacker, to assume that in 1963 you made a load forecast for 1971 included. That is, of course, a practice which you did engage in over the years, was it not?

A Yes, sir.

Q Can you get out Exhibits 9 and 10, Mr. Hofacker?

A Yes, sir, I have them in front of me.

Q Exhibit 9 had the rather smooth curve drawn for base load which was your exponential trend extrapolation, was it not?

A Yes, sir.

Q It would be true, would it not, Mr. Hofacker, that if we were trying to put your estimates for projected load growth onto a similar kind of line, it couldn't be that smooth?

A For the base load?

Q Yes.

A I'm not sure I understand why.

Q Well, if we took, for example, what you had projected in 1963, and we look at what you actually did in 1971, there would be differences, wouldn't there?

A Undoubtedly.

Q And, indeed, in 1963 and '65 and '67, every year or two, you would have changed your projected loads, wouldn't you?

A Yes, sir, in tune with the current situation.

Q If we went back to the original one, for example, on this particular Exhibit 9, it would be 1952, we certainly wouldn't find any steady curve that ran from 1952 to 1975, if we only looked at your original estimate, would we?

A Yes, you would. Our projection was a curve.

Q But if you tried to put your actual and your projections onto one curve, what you would find, instead, would be the squiggly lines that appear on Exhibit 10, wouldn't you?

A No, they wouldn't be squiggly on 9 because that's an annual, and they wouldn't vary nearly so much as those month by month do on that 10.

Q Well, they'd still squiggle, wouldn't they?

A Oh, to a slight degree, but not like that.

Q Well, for example, wherever there's a difference between the estimate and the actual on Exhibit 10, you would have a departure from the smooth line on Exhibit 9, wouldn't you?

A Oh, yes, there would be, but it would be the departure from two smooth curves.

Q Because you used trend extrapolation by exponents?

A Yes, sir.

Q Mr. Bellingham was asking you if it was not the case that you changed your load forecast as your needs moved around and circumstances changed, and, of course, you affirmed that once again, did you not?

A I did.

Q And it's true, is it not, Mr. Hofacker, that in the last few years, you had to do considerably more frequent revisions of your load forecast than you had done the decade before?

A No, sir, I'm not sure this is true.

Q Well, let's look at the record, sir. There is a load forecast of February, 1975; November, 1974; and February of 1974 or three load forecasts within one year, isn't that right?

A Yes, sir.

Q The one that preceded February, 1974, is August of 1972. The one that preceded that was August of 1970. The one that preceded that was in April of 1966, isn't that true?

A It is. But we looked at them each year.

Q You just didn't make up new forecasts each year, did you?

A No, sir, because we didn't have the indication that warranted, as we saw.

Q Because the circumstances hadn't changed that much?

A That's right.

Q But circumstances have been changing more frequently more recently, haven't they?

A They have been.

Q Doesn't that suggest to you, Mr. Hofacker, that in the continuing future you will be having to revise your load forecasts on an increasingly frequent basis?

A It would certainly indicate that probability, sir.

Q And, indeed, that's the reason that you're now looking at the assistance of computer analysis in order to shorten the otherwise manual time in having to do your load forecasting?

A A look at a larger matrix of variables.

Q And you're looking on a monthly basis now, aren't you?

A Yes, sir.

Q Would it be surprising for you to find that where you revised your load forecast in February of '75, you might be revising it again in August of '75?

A It might well be.

Q You've used the homey analogy of reserves as if a spare tire were placed in the trunk of one's car?

A Yes, sir.

Q If, in fact, Mr. Hofacker, a car operated on only four wheels and one tire per wheel, but folks had five wheels in their car, that would sort of be a margin that you might call a reserve, right?

A It would be, sir.

Q If, in addition to that margin, there was still an additional spare tire just in case there might be two blowouts or two flat tires, that would be sort of excessive reserves, as we use the analogy in driving cars, wouldn't it?

A It would depend on what you're driving on. You go on the Alaskan highway you may want four spares, sir.

Q Sure, if you want to go over a highway full of tacks and brads and broken glass, you probably wouldn't want to drive there?

A I wouldn't.

Q But when Mr. Bellingham was looking with you at Applicants'

Exhibit 118, the West Group Forecast under Section 3, the Summary of Resources and Requirements, first page, which excludes reserves, it is true, is it not, sir, if you look at the last year, for example, on that page, 1985-1986, there is a margin of 9766 megawatts of surplus peak overload without reserves?

A Yes, sir.

Q Now, wouldn't you say that that's a margin that you might call a reserve?

A Well, that's certainly available for reserves.

Q But, as a matter of fact, the West Group members and some of the non-members of the West Group, like the Montana Power Company, are projecting, in addition to this kind of peak load, an on-top reserve, isn't that true?

A No, sir, this -- it would be in this number that the reserves would be.

Q Doesn't it say on that page without reserves there's a surplus?

A Yes, sir, but you would subtrack the reserves forecast from that to see how much there was surplus over the reserves planned.

Q Well, Mr. Hofacker, you will agree with me, will you not, sir, that if the peak forecast on loads is less than the peak forecast in resources, that that is a reserve?

A It's surplus available for reserve, yes, sir. It's a reserve.

Q And you will also agree with me, will you not, that when forecasting is done for resources for peak, there are forms in which reserves are included?

A It's the loads plus reserves that -- the way you add them. You don't add them to the loads.

Q No, you add them to your resources?

A No, well, we're not on the same wavelength with you, sir.

Q Well, I believe you did so, did you not. For example, if you looked at Exhibit 4 that you have prepared for this proceeding where you list in tabular form peak, you list resources, load, and reserves, isn't that true?

A Yes, but the reserves are added to the loads, sir, to see how much resources there are available to cover the load and the reserves.

Q All right, but that is a reserve that is on top of what is already expressed in the load, is it not?

A No, sir, there's no reserve in that load there.

Q I think you meant to say yes then. The reserves are on top of the load, aren't they?

A Yes, sir, as enumerated below.

Q Where the estimated total peak load appears on the same page of the West Group Forecast, the first page in Section 3 --

A First page in Section 3, you say?

Q Yes, sir.

A I have it, yes, sir.

Q Where it says estimated total peak load, is that with or without reserves?

A Estimated total peak load is without reserves.

Q So you'd have to add your reserves on top of that load, wouldn't you?

A That's right.

Q Now, Mr. Bellingham was also asking you with respect to Exhibit 6 why your firm resources did not include Median Water Adder?

A Yes, sir.

Q And your testimony was that you elected not to include Median Water Adder, because you didn't think that was firm, is that right?

A It is not firm, sir.

Q It is true, is it not, sir, that the critical hydro on which you base your resources before you get the Median Water Adder is the lowest water resource available since 1937?

A It is.

Q In fact, that was the year, wasn't it, 1937, with the lowest resource load?

A 1936-37, yes, sir.

Q Would we infer from that therefore, Mr. Hofacker, that in every year since 1937, if we look back with historical perspective, in fact some Water Adder had to be added to see what the resources were?

A Yes, sir.

Q And when those resources, in fact, were made available, were they firm?

A Not for the long-term basis, sir. As they occured, they showed up and were available to carry whatever load that was -- that -- needed at that time, but it was what you would call secondary, that you would carry it if you had that water available.

Q If you needed it, it would have been available for your base load, wouldn't it?

A Yes, sir.

Q Did I correctly understand your testimony, on redirect examination, that the reason you didn't include the Bird plant is the same reason that you don't have any other turbine combustion plant now in your projections as firm load for generation?

A Yes, sir.

Q But the Bird plant inclusion would have been a much less expensive inclusion than building a new turbine combustion plant, wouldn't it?

A It's not a cheaper source of peak -- I take that back. It's a cheaper source of peak reserve, yes, sir, but not necessarily of energy reserve. There could be sources of energy if you needed it that was cheaper; that's what I'm saying.

Q Whatever you use the Bird plant for, if you built a similar turbine combustion plant, it would be more expensive in operation than the Bird plant, wouldn't it?

A The fixed portion might be, but the variable costs would be more.

Q Did I also correctly understand your testimony under redirect examination that after the year 1981, the need for additional generating facilities is not so critical because, between now and then, you'd have time either to get other plants on stream or to join in other facilities that are coming on stream?

A I said the probability of having time was better as you get farther from the area that you have no alternative or no possibility of moving alternatives in.

Q Well, that's something I wanted to ask you about that I forgot to ask you about in my cross-examination. I'm glad Mr. Bellingham brought it up. That's what I understand the record to be during my cross-examination of you, Mr. Hofacker, that you're really looking at the critical years as the latter part of 1979, the year of 1980-1981. I suppose the question that I should frame to you, sir, is if those, indeed, are the only really critical years as you have defined them, why are we going through all of this for that relatively short period of time?

A They are the most critical years. We need resources from thereafter, and these will be the cheapest resources available to us for the remaining years following them.

Q These would be no cheaper resources than might be available to you from other sources though, would they?

A They certainly would, sir.

Q Would they be cheaper than purchasing power from other facilities coming on stream elsewhere?

A Very probably so.

Q Why?

A Because our fuel costs from here are cheaper than anyplace we know of, and the fixed costs are cheaper than any alternative that I know of for base load plants.

Q Well, you know, do you not, Mr. Hofacker, that the Portland General Electric Company Carty Coal Plant at Boardman, Oregon, projects lower costs of construction and operation than you do?

A It might well be. They may not be lower than what we originally projected, sir.

Q Because they're doing their projecting now at the same time you're doing your projecting, aren't they?

A They're doing their projecting at an earlier stage than we are now projecting, sir, in their project.

Q Now, Mr. Bellingham made some point of having you read into the record the whole of what is already into the record as the entire Exhibit 118, with your focus on a paragraph from a page in the Discussion Section of the report. I wanted to ask you to explain something to me in that paragraph, if you would, Mr. Hofacker. It's page 2 of the Discussion Section.

A I have it, sir.

Q It's the sentence that begins: If experience shows that more than enough resources have been scheduled, then the schedules can be corrected. See that sentence?

A Yes, sir.

Q How do you correct the schedules; do you defer them?

A By slowing down the construction.

Q That's what PP & L did at Jim Bridger?

A Yes, I believe that's what they did at Bridger.

Q Now, that's what you've done at Colstrip 3 and 4?

A We did not do it voluntarily, because we still have a deficit in '78-79 we've got to fill some way or another. If we could have gotten it in '78, we would have made every effort to get it then.

Q But if you had decided, Mr. Hofacker, sometime before January 17, 1975, when you finally informed the Department of Natural Resources of the rollback in the Colstrip 3 and 4 schedules, that you didn't need the units on stream as originally scheduled, what you would have done was exactly the same thing as you did do, isn't that true?

A If we had so desired, but we reached the time that we couldn't do other than let it slip. We couldn't maintain schedule.

Q But if your reason for rollback was the same as Pacific's reason for rollback at Jim Bridger, then you would have done the same thing that they did?

A Certainly you would.

Q And the effect of what you have done is the same, isn't it?

A No, sir, because we've left a deficit in '78 that we don't know how to supply. Pacific moved it, because they didn't need it at that time.

Q They didn't have a deficit?

A I don't know what they had. I understand that they didn't have need for that and moved it, so I presume that would mean a deficit in the Wyoming area.

Q They're the biggest system of the five Applicants?

A Load-wide, I believe, yes, sir.

Q Then continuing in the West Group Forecast, Mr. Bellingham asked you to explain what it might mean if the public were to be injured by having too few resources available. When's the last time that the public was so injured in Montana?

A 1973.

Q How was the public injured then, sir?

A There was inadequate water available, and so people were laid off because of a curtailment of power at the Anaconda Aluminum Company.

Q Is that something that the Montana Power Company had something to do with?

A No, sir, but this is what happened in Montana.

Q Well, if you actually look at the Anaconda Aluminum Company, like the other nine aluminum companies in the states of Oregon, Washington, and Montana, what you will find is that they entered into contracts with the Bonneville Power Administration in which they paid a rate which was based on the assumption that there would be an interruption in the load from time to time, is this true?

A Yes, sir, they did.

Q It was not unreasonable to expect a company which pays for interruptable power to find interruptions, is it?

A No, sir.

Q If they never had interruptions, then they ought to be paying for the same kind of rates that the rest of us have to pay expecting no interruptions, isn't that true?

A Yes, sir.

Q What other kind of public injury do you know of that last occurred in Montana?

A I can't recall any, sir.

Q What other public injury do you know of that last occurred in the Pacific Northwest?

A I'm unaware; I think there were the same effects in the Northwest in not only the aluminum, but in the railroad employees, the chemical employees that resulted from lack of power.

Q Those people had interruptable contracts?

A I'm not sure whether it was confined to just interruptable contracts.

Q Is it your testimony, sir, that there was some firm contract with an industrial user in the Pacific Northwest which was breached?

A Sir, it is not that; I said that I did not know whether it was only interruptable.

Q You don't know of any non-interruptable contract which has been interrupted in the Pacific Northwest since 1937, do you?

A I'm not that knowledgeable, sir, of the Northwest.

Q Also, in the West Group Forecast, you told us that there were some 16 companies who's loads were aggregated in order to give us the forecast, and then there was some touch of other companies also referred to, but that isn't the whole load of all the other companies, is it?

A I couldn't answer that.

Q You know, for example, that there are well over a hundred utility companies operating in the West Group?

A Yes, sir, that's what I stated.

Q And they don't all put their little figures together in the same way -- or big figures -- in the same way that the 16 utilities do who send their stuff to Glen Nogle for the West Group Forecast, do they?

A The BPA accumulates all of those and puts them into the West Group Forecast, as I understand it.

Q You don't want us to believe, do you, Mr. Hofacker, that the West Group Forecast is a compilation of all utility companies operating in the Pacific Northwest as a result of all of them doing their load forecasting and resource forecasting?

A I've made no such statement, sir.

Q It's not the case, is it?

A I don't know whether it is or not, sir.

Q There just isn't any forecast which is published, is there, Mr. Hofacker, which is like the one that I just described in which every operating utility company, irrespective of its membership in the West Group or the Western Systems Coordinating Council, actually makes a load forecast and resource forecast and sends the figures into a coordinator for publication?

A Unless I'm misinformed I had assumed the West Group Forecast was done that way.

Q Well, the fact is, is it not, Mr. Hofacker, that a lot of utility companies within the Pacific Northwest and elsewhere, for that matter, are rather small and do not maintain any kind of facility for doing sophisticated load forecasting?

A I was under the impression they made known what they thought their needs were to Bonneville, but if I'm in error, I'm in error.

Q And then again in the West Group Forecast, Mr. Bellingham had you look at the with-Colstrip forecasts that were being made for resources that might be available after 1979 and the latter part of 1979, and I believe you told us that, certainly, in the years 1979 through 1981-82 there would be energy deficiencies even with Colstrip?

A I believe that's what the tabulation showed, did it not?

Q Isn't the Colstrip project then, as far as the West Group is concerned, sort of a finger in the dike with other holes already there?

A No, sir, it's a very essential portion in there.

Q Well, what we're looking at for energy projections, I take it, Mr. Hofacker, is energy, firm, uninterruptable energy, isn't it?

A Yes, sir, and it's made up of many, many plants from a few megawatts on up to a thousand.

Q Isn't what it means when it says that there's going to be a deficiency in energy, even with Colstrip, in 1979-1980 of over 2000 megawatts, that a system about twice the size of the Montana Power Company will be fully without energy to supply?

A Yes, but they'd be far worse off with an addition of seven or eight hundred more. That might be the straw that breaks the camel's back.

Q Doesn't this analysis tell you that we'd better do something else?

A There are other things being done, sir.

Q What are the other things we're supposed to do?

A We're supposed to do?

Q We, those of us who are concerned about delivering sufficient energy to our customers.

A Well, they're looking for ways of doing that, and they may very well have to run high cost peaking resources to get that energy.

Q Well, can you run peaking resources for energy?

A Why, I have never denied it. Not hydro, but thermal.

Q Like the Bird plant?

A Yes, sir.

Q What else can you do? You have to do something.

A You could reduce your reserve during that period of time. If it's energy, there's some energy reserves. If it's peak, you may wind up with brownouts or limited termination or limited reduction in loads of interruptable plants.

Q If we look at this most current year, 1975-76, this forecast tells us that there's going to be a 779 megawatt energy deficit, isn't that true?

A It certainly does.

Q Wouldn't that tell you, therefore, Mr. Hofacker, that sometime between July 1, 1975, and June 30 of 1976 we're going to have some brownouts around here?

A With median water, there might be help from median water. You could run the expensive fuel turbine that I was talking about that are considered peak reserves.

Q You mean that if we actually had the kind of water that has been available every year since 1937, we won't have the brownouts?

A I did not say that, sir. There have been varying degrees; in fact, 1973 was almost worse than '36-37, but we were bailed out late in the year.

Q It was bailed out very, very rapidly, was it not, when the Grand Coulee reserves -- or reservoirs, I should say, became the largest that they'd ever been?

A Yes, sir, but it could have gone the other way, too.

Q I suppose it could have gone the other way every year since 1937, but it hasn't, has it?

A It hasn't.

Q Now, with respect to Exhibit 13, Mr. Bellingham asked you about why you were excluding the purchase of rolling stock, and I believe one of your answers to that was that the stock was not going to be built in Montana?

A Not to our knowledge.

Q Is it your testimony, sir, that no part of the manufacture of the equipment which the railroads would put onto service in order to haul coal from Colstrip to Hot Springs in 1979 would be in Montana?

A I don't know what they would be, sir.

Q Well, even if there is any part of that equipment which is purchased in Montana, that while they're gearing up ready to take the coal on the haul, you didn't include that in your study, did you?

A Yes, sir, because we could not visualize what might have been purchased in Montana. We don't have any steel in Montana.

Q Your view is that the rail cars are all manufactured someplace else, and they arrive here on the rail tracks, and there's no Montana benefit from that at all, economically?

A There's benefit from the capital investment. We've included that, as you see, by those stockholders living in Montana.

Q Other than that, no Montana benefit?

A I don't know what they would be, sir.

Q One of the assumptions you did not make was that the utility companies themselves would own the rail cars, right?

A No, sir, because that would have decreased the benefits as far as the effect of the rail.

Q Are you of the opinion that it costs more on a freight rate for the railroad to haul cars owned by the railroad than it costs for the railroad to haul cars owned by utility companies?

A No, sir, I'm saying that the return on that investment would go to stockholders outside of Montana, the other utilities.

Q It certainly would be the case for Exhibit 12, would it not, Mr. Hofacker, that the cost of hauling coal by rail would have been less if you had assumed the ownership of the cars by the companies, is that not true?

A Yes, the freight rate would have been but not the cost of moving the coal.

Q Well, the freight rate is the largest element of the cost of moving the coal, isn't it?

A It might well be.

HEARINGS EXAMINER: How much longer do you think you will be, Mr. Shenker:

MR. SHENKER: I think I have about ten minutes more; we can probably conclude it before 10 o'clock tomorrow morning as far as my re-cross is concerned?

HEARINGS EXAMINER: Fine. Other gentlemen may have more re-cross.

MR. SHENKER: Would you like me to continue now or come back in the morning?

HEARINGS EXAMINER: Would you like to continue in the morning?

MR. SHENKER: Fine with me.

HEARINGS EXAMINER: I don't like to interrupt you.

MR. SHENKER: That's fine.

MR. ROSS: May I ask one question before we adjourn?

HEARINGS EXAMINER: Yes.

MR. ROSS: Earlier this afternoon, Mr. Shenker handed me a list of five publications with reference to Dr. Faith. I've since gone back and talked with Jack Peterson and Dr. Faith, and they -- their understanding is that during his deposition you requested a list of publications, and that, in fact, this document now is that list that you requested, and they said no further request was made during during that testimony.

MR. SHENKER: My understanding is not the same, John. The list that you're holding in your hand was the back page of a document that Dr. Faith did present at the time of the deposition, and my understanding was that we'd asked for the specific publications themselves. If I'm mistaken in my recollection, it is certainly the case that we do want those publications; if he has them, we'd like them.

MR. ROSS: Like I say, it's our understanding that the list was requested, and then, subsequently, we supplied this list, and my reading of the deposition seems to substantiate that position. We do not have these documents now with us, and also I think as we indicated when we provided the list, they are available in any general library.

MR. SHENKER: Well, we tried to short circuit having to get copies from Dr. Faith by going to the general library, and they tell us those documents are not in publication, so if he has copies of them, we'd like them.

MR. ROSS: I will check again with Dr. Faith. But it's our position that until this point in time we were only supposed to provide a list, which we've done.

HEARINGS EXAMINER: We will reconvene at 9 o'clock tomorrow morning.

MR. SHENKER: Is my position clear on the record that we are asking for those publications themselves?

HEARINGS EXAMINER: The record will so show.

MR. BROWN: Mr. Davis?

HEARINGS EXAMINER: Yes, sir.

MR. BROWN: Actually, it was I who reminded Mr. Shenker about the request for two of those five documents. I just read Mr. Faith's deposition yesterday, and, as I recall the specific statements in the deposition, Mr. Shenker did request the production of the actual documents, at least as the request pertains to the study conducted by Western Scientific Services as to air flows in 1970 in the Colstrip area, and the document prepared by Mr. Faith, I believe, for the Environmental Protection Agency dealing with modeling in the Colstrip area. At least as to those specific documents, a request was made at that time that the documents be produced, and, I believe, Mr. Peterson was in attendance and agreed that they would be produced.

HEARINGS EXAMINER: The record will also show there are further items to discuss down the road. We will adjourn until 9 o'clock tomorrow.

(RECESSED AT 5:00 P.M.)